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Practical Pharmacy Edition

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ENTERED as second class matter January 23, 1917, at the Post Office at Easton, Pennsylvania, under the act of March 3, 1879, as 24 times a year; Scientific Edition monthly on the 5th; Practical Pharmacy Edition monthly on the 20th. Acceptance for mailing at a special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 10, 1918.

The Veterans Administration has announced that the World War II GI Bill training program will be terminated on July 25, 1956. No unused GI training can be used after that date; no veteran will be permitted to continue his training after that date except those who enlisted between October 6, 1945, and October 5, 1946. At present there are 70,000 World War II GI trainees, and during the life of the World War II GI bill more than 7,800,000 veterans received training benefits.

Dr. Leonard A. Scheele, Surgeon General of the U.S. Public Health Service, has announced that qualified pharmacists and other professional health personnel actively engaged in public health practice and preventive medicine are being encouraged to apply for commissions in the Service's expanding commissioned reserve. Expansion is for the purpose of increasing the nation's readiness to meet the unusual public health demands of national emergencies.

President Eisenhower has proclaimed the month of April 1956 as Cancer Control Month. He has invited the governors of the states, territories and possessions to issue similar proclamations and has urged the medical profession, the press, the radio, television and motion picture industries and all interested agencies and individuals to unite during the appointed month in public dedication to programs for the control of cancer. Pharmacists should cooperate with their local chapters of the American Cancer Society.

Federal Civil Defense Administrator Val Peterson announced on April 1, 1956, the awarding of a contract to the University of California for research leading toward a national radiological defense plan. Governor Peterson, in announcing the research project, said: "The threat of radioactive fallout from an enemy attack is relatively new and greatly increases the problems and responsibilities of civil defense in the United States. We are in urgent need of a logical and detailed nation-wide system of defense against fallout not only to increase the chances of survival under nuclear attack but also to strengthen our national defense armament as a deterrent to attack."

Under the Korean GI Bill 51 per cent of the total of 1,300,000 veterans have received all types of training as compared with 26 per cent of the total of 7,800,000 veterans of World War II.

The Veterans Administration announces that in June 1956 a second class of 3 pharmacists will complete the 2-year combined academic and professional residency in hospital pharmacy leading

. . . and last-minute news

to the degree of Master of Science in Hospital Pharmacy at the University of Southern California.

The Veterans Administration and cooperating universities are offering pharmacists an opportunity to take graduate work towards advanced degrees in pharmacy as VA pharmacy residents. Two years are required to complete the residency, which is a combination of graduate school study and practical experience in a VA hospital leading to the degree of Master of Science. Pharmacists accepted for the program will receive compensation while working at a VA center or hospital. Applications should be filed before May 1, 1956, with the Executive Secretary, Central Board of U.S. Civil Service Examiners, Veterans Administration, Washington 25, D.C.

At the 5th annual Rutgers Pharmaceutical Conference to be held May 9 at the New Jersey State University in New Brunswick, new products, food and drug laws and the outlook for business as well as interprofessional, trade and public relations, will be discussed.

Dr. Lloyd McLean Parks, Professor of pharmaceutical chemistry at the University of Wisconsin, has been appointed Dean of the College of Pharmacy at Ohio State University. Dr. Parks will assume his new duties July 1, 1956, succeeding Dean B. V. Christensen, retired.

Recent reports by Drs. Max Miller and James W. Craig of Western Reserve University School of Medicine and by Dr. I. Arthur Mirsky and associates in the School of Medicine, University of Pittsburgh, indicate that orinase, a substituted sulfanylurea, is orally effective in some diabetics for reducing blood sugar.

According to Dr. Ernest H. Volweiler, President of Abbott Laboratories and Vice President of Health Information Foundation, which recently completed a nation-wide survey on family health costs, 1,160,000 prescriptions are filled daily in the United States at a total cost of $1,000,000,000 dollars per year. He pointed out that the drug industry employs 35,000 persons in drug research and spends about $100,000,000 annually to improve existing drugs. He estimated that 70 per cent of today's prescription items were not available 10 years ago.

Federal Food and Drug Administration has issued a public warning against the Hoxsey treatment for internal cancer as it is imminently dangerous to rely upon it in neglect of competent and rational treatment, and its sale represents a gross deception to the consumer.

LETTERS

Professional Service

Sirs:

About one mile from my home is the store of a pharmacist. For over 10 years this man has been serving our community. Rain, snow, or sleet, he is always out no matter what may happen. Since the first day I met him I've admired his work, and I've come to like his occupation.

Would you please send me all the information you possibly can on this occupation.

Rochelle Park, N.J. GARY LARGER

Book Reviews

Sirs:

It is my suggestion that the book review section be duplicated in the *Practical Edition*. You bypass a large potential who have little interest in the more technical *Scientific Edition* and seldom peruse the last few pages where the reviews are usually printed.

Remember—it's only a suggestion.

Rockville Centre, N.Y. JACOB M. BLOCH

Servicemen

Sirs:

. . .I am very proud to have my membership in the A.PH.A. continued in the service classification. I think this organization is doing good work for the profession of pharmacy.

I received the informative and educational bulletin entitled, "The Role of Pharmacists in the Army"

Kinston, N.C. JAMES D. POLK

Sirs:

. . .The Practical Edition of the A.PH.A. JOURNAL kept me abreast of new developments in pharmacy while I was in the service, and your letters about pharmacists in the service were both informative and helpful.

New York, N.Y. DONALD LEVINE

Sirs:

I realize that much has been done to improve the status of pharmacists in military service but in spite of that the military . . . has failed to grant proper standing to our profession.

I have just returned from a two weeks' tour of duty with the Army. Being a pharmacist, and having been associated with the military service for the past ten years, I am greatly concerned with the status of pharmacists in the service. Incidentally, I earned my commission in the Chemical Corps and upon graduation from pharmacy school was able to transfer to the Medical Service Corps. To my amazement, I found only one pharmacy officer in the organization of a 1600 bed hospital. His official title was "administrative assistant" and as such his duties were so numerous that he could barely find time to poke his head into the pharmacy each day.

I feel that the mere existence of a 16 week pharmacy course which graduates pharmacists is a detriment to our profession. I further feel that the AMERICAN PHARMACEUTICAL ASSOCIATION should forbid the *filling* of prescriptions by anyone other than professional pharmacists who are graduates of accredited schools of pharmacy. These professional pharmacists should be commissioned, trained in Army procedure (indoctrinated), and assigned to pharmaceutical duties in the same manner as physicians and nurses.

Nashville, Tenn. JEWEL B. HARPER

Sirs:

. . . I would like to take this opportunity to congratulate the A.PH.A. for the effort it has made in the past to gain at least a little recognition for the registered pharmacist in the Armed Services. I could (and do, occasionally) complain and argue with my superiors week after week about the situation we pharmacists face in the Service but it takes the members of the A.PH.A. to really do something about it—so I feel that my membership dues are money well spent, indeed.

Seattle, Wash. JERRY M. LAFLIN, A/2c

A Living Code

Sirs:

Many pharmacists, in an attempt to increase the regard and respect of the laymen for the profession of pharmacy, have brought forth a variety of constructive ideas. The rebirth of pharmacy will come only when each pharmacist looks at himself as in a mirror and sees himself in the eyes of others.

What norm can the pharmacist use to evaluate his own standing in his profession? At the end of the day he can read the Code of Ethics of the A.PH.A.. paragraph by paragraph. Then he must transpose those thoughts on paper into action the next day.

The rebirth of pharmacy will come from you, the individual pharmacist, living by your code of ethics.

Omaha, Nebr. WILLIAM W. BECKER

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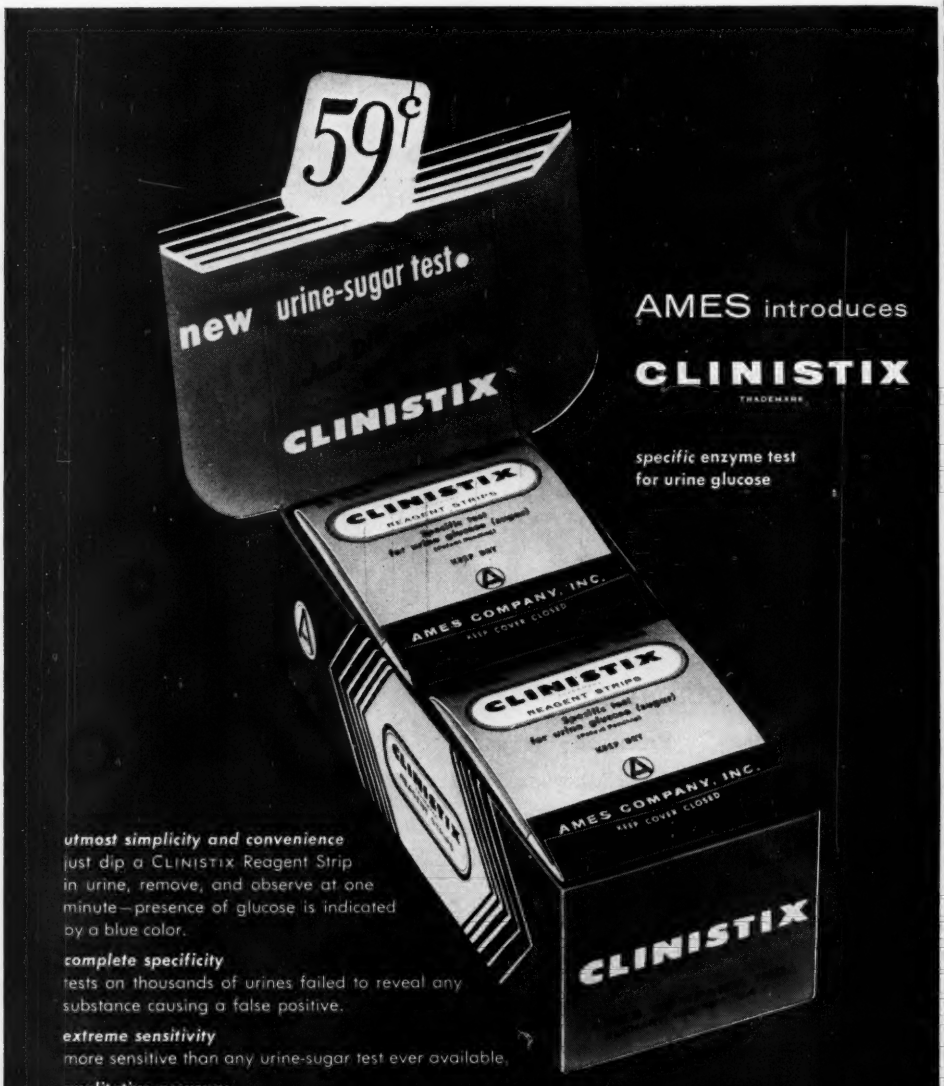

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℞ information service

Members of the American Pharmaceutical Association are invited to submit their professional problems to The Journal, 2215 Constitution Ave., N. W., Washington 7, D. C. Inquiries should include all pertinent details.

Bismuth Subsalicylate Injection—Source

Can you inform me of a manufacturer of ampuls containing about 130 mg. of bismuth subsalicylate per cc. in peanut oil?—H. M., Ohio.

The American Drug Index, 1956, lists Endo Products Inc., as a supplier of 2-cc. ampuls containing 0.1 Gm. bismuth in peanut oil/cc. Testagar & Co., Inc., markets 30-cc. vials of an oil suspension containing 100 mg. of bismuth subsalicylate per cc.

Boric Acid Solubility in Water

How can you make Saturated Boric Acid Solution N.F. that will stay free from crystals?—A. H., New York.

The term "saturated" in the synonym for Boric Acid Solution N.F. is a misnomer and is so indicated by the use of quotation marks. Although the monograph formula directs the preparation of a 5% solution, the official description permits concentrations as low as 4.25%. The solubility of boric acid in water as given in *Bull. N.F. Comm.*, **10**, 78 (April 1942) is: Gm. H_3BO_3/100 cc.—6.6 at 30° C., 5.5 at 25° C., 5.04 at 20° C., 4.65 at 15° C., 3.5 at 10° C. It would appear, therefore, that a storage room or shop shelf at 20° C. (68° F.) would permit retention of 5% of boric acid in solution, and that a storage temperature of 13° C. (55° F.) would permit retention of 4.25% of boric acid in water without a deposit of crystals.

Stilbamidine—Source and Use

Please supply information on a drug named Stilbamidine. Who makes it?—U.B., District of Columbia.

Stilbamidine isethionate was produced by The Wm. S. Merrell Company and was tested clinically for the treatment of tropical trypanosomiasis and leishmaniasis. It was also reportedly used for tic douloureux. This drug was replaced by Hydroxystilbamidine isethionate ampuls (Merrell) because this derivative is less toxic and is equally effective in the treatment of the systemic fungus infections, blastomycosis, leishmaniasis, and Indian kala-azar. Hydroxystilbamidine isethionate is marketed in ampuls containing 225 mg. of the sterile powder in each 20 cc. of injection.

Compound Benzoin Tincture—Water-Soluble

Please inform me how I can render compound benzoin tincture U.S.P. water-soluble.—R.D., New York.

Mix the compound benzoin tincture with about four times its volume of polysorbate 80 (Tween 80). When added to water with stirring, a clear dispersion is obtained.

Calamine Lotion U.S.P. XV

We did not like the U.S.P. XIV calamine lotion and therefore continued to prepare the U.S.P. XIII product which we labeled "Calamine and Lime Water Lotion." The U.S.P. XV calamine lotion shows twice as much settling as the U.S.P. XIII product. What can we do with the U.S.P. XV formula and still label the product U.S.P.?—A. LaC., Maryland.

You can still handle calamine lotion according to your solution of the problem during the period in which U.S.P. XIV was official. If the U.S.P. formula is altered in any way the product cannot be labeled "U.S.P." Problems of this nature should be directed also to the director of revision of the compendium in which the preparation is official in order to assist him in finding a satisfactory solution to this constantly recurring problem.

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Progress in Medicine

Bioflavonoids, Vitamin C and Colds

"Can bioflavonoids with ascorbic acid cure or control common colds?" In a letter to physicians, Dr. G. J. Martin, research director of The National Drug Company, finds that present evidence does not indicate curative properties. He notes, however, proper utilization of hesperidin-ascorbic acid combinations, possible only under a physician's care, may be useful as a prophylactic for those patients who are prone to suffer frequent colds. The drug combination in doses of 300–600 mg. apparently improves capillary integrity and helps restore normal permeability.

Emotional Variables and Hypotensive Agents

Changes in blood pressure and symptoms of hypertension during treatment with hypotensive drugs are frequently due to the psychologic effect of emotional factors (rest, removal from daily routine, confidence in physician, etc.) as well as the pharmacologic activity of the drug or drugs, according to Dr. A. P. Shapiro, *Psychosom. Med.*, **17**, 291 (1955). Patients given a hypotensive drug and a placebo alternately for random periods frequently show equal changes in blood pressure with both dosages and often show side-effects supposedly associated with the drugs while receiving a placebo.

Promazine in Mental Disturbances

Clinical studies of the action of promazine on 550 patients suffering from disturbed mental states show this drug possesses pharmacological properties similar to those of chlorpromazine and that its toxicity is of the same order or less. Promazine (Sparine, Wyeth) is dimethylaminopropylphenothiazine, while chlorpromazine (Thorazine, S. K. & F.) contains a chlorine atom in the molecule. Results of the studies with promazine were published by three physicians in the February 1956 issue of *Med. Annals District of Columbia*. The physicians state: "The management of patients with central nervous system excitation due to various disturbances can be greatly facilitated by administration of promazine" i.v., i.m., or orally in doses of 50 to 400 mg. They add: "We have not yet had sufficient experience with either large numbers of patients or long-term administration of large doses to draw definite conclusions regarding such toxic manifestations as jaundice, agranulocytosis, lactation, photosensitivity, or basal ganglia disturbances such as have been observed with other phenothiazine derivatives. The clinical effectiveness of this drug and the low degree of acute toxicity appear to warrant further investigation."

Suntan Ointments May Cause Dermatitis

Suntan preparations may protect the skin from "sunburning" light rays and may also produce a chemical reaction in the skin which sensitizes it to other light rays, reports Dr. W. M. Sams in the February issue of AMA *Archives of Dermatology*. Lime oil, bergamot oil, some perfumes and toilet waters, and some tannic acid derivatives have caused reactions. Patch tests with the suspected preparations fail to produce reactions in most cases without exposure to sunlight.

Dangerous Handling of Physicians' Samples

An editorial in *JAMA*, points out the dangers of uncontrolled placement or discarding of samples of medication received by physicians. Cases of poisoning in children who have ingested such samples lying about the house or dropped into waste paper baskets are mentioned. The practice of collecting and selling drug samples and the inherent dangers are noted. It is pointed out that physicians, for their own protection, for the protection of their children, and for the protection of others, should dispose of unwanted drugs in a way that will prevent their subsequent misuse.

Effect of Drugs on Morning Sickness

The most important effect of most drugs upon nausea and vomiting of pregnancy is psychological, according to a report by the AMA Council on Pharmacy and Chemistry in the January 21 issue of *JAMA*. The common physiological form of "morning sickness" usually responds to diet control, mild sedation, and psychotherapy. The rare pernicious type requires sedation and active hospital treatment to restore electrolyte balance and replace caloric and vitamin losses. Various drugs, including most vitamins, antihistaminics, and antimotion-sickness drugs have not been demonstrated to exert a more specific

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effect than placebos or sedatives upon either form of nausea and vomiting associated with pregnancy. In some cases pyridoxine (vitamin B_6) may be a useful adjunct in the treatment of the pernicious form, and chlorpromazine is considered to warrant a trial as an antiemetic in this form preferably before liver damage has occurred.

Cathomycin, Streptonivicin and Cardelmycin Identical

The three antibiotics, cathomycin (Cathocin-Merck, S. & D.), streptonivicin (Albamycin-Upjohn), and cardelmycin (crystallinic acid) (Pfizer), have been identified by chemical and physical tests as the same antibiotic, although they were discovered independently and from different sources. The data are reported by H. Welch and W. W. Wright in *Antibiotics & Chemotherapy*, **5**, 670(1955).

Chloromycetin in Acute Pyelonephritis with Diabetes

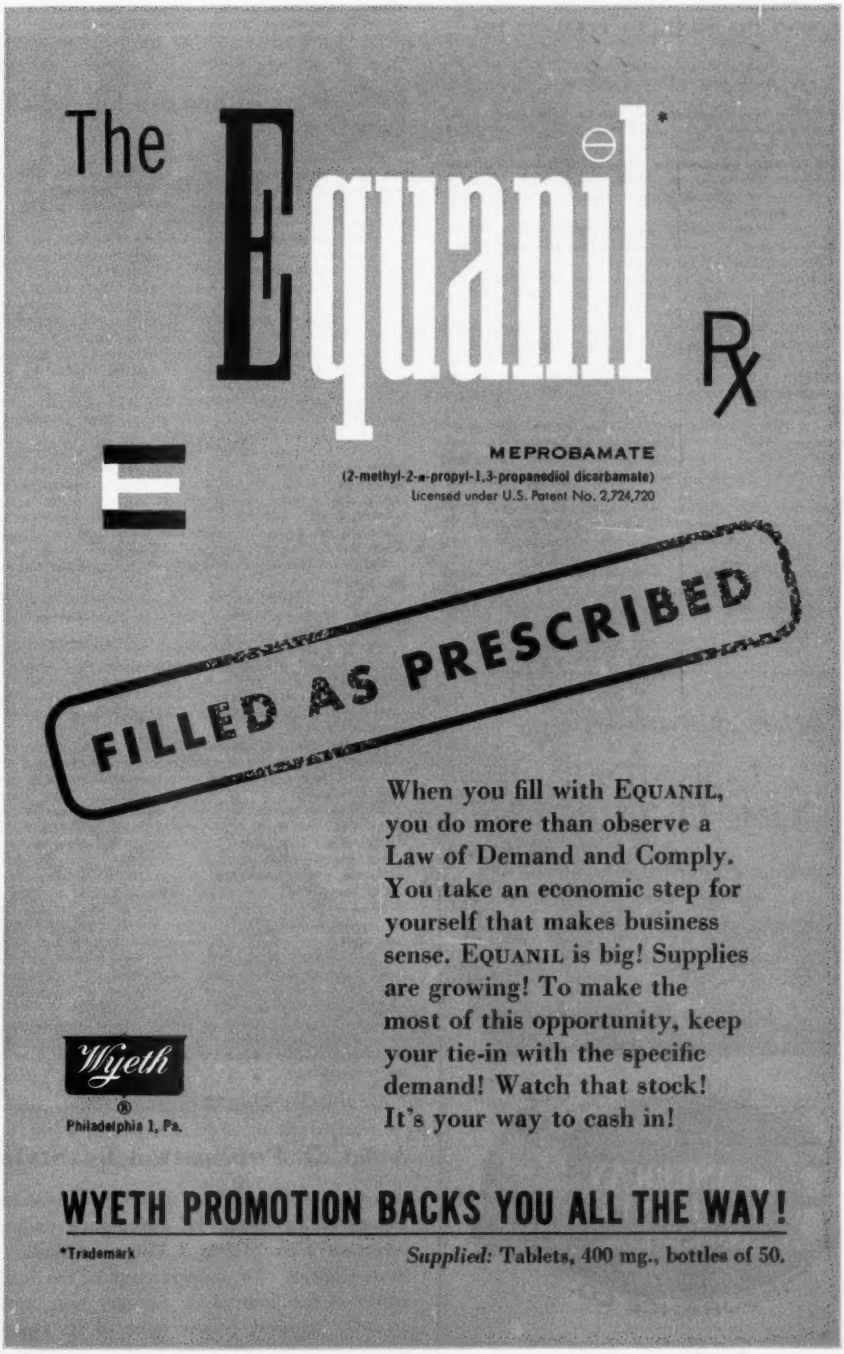
Favorable results in the treatment of 14 diabetic patients suffering from acute kidney inflammation are reported by five physicians in *Canadian Med. Assoc. J.*, **73**, 956(Dec. 15, 1955). Dosage was 2–4 Gm. daily by intramuscular injection for the first week and half that dose the second week. This intensive course of treatment is more likely to clear the infection.

Bacterial Sensitivity to Drugs

Chloramphenicol and nitrofurantoin were found to be more effective than oxytetracycline, tetracycline HCl, erythromycin, dihydrostreptomycin and penicillin in laboratory tests against bacteria frequently isolated in a hospital laboratory. The report by Dr. Robert E. Perry, Jr., in *N. Carolina Med. J.*, **16,** 567(Dec. 1955) concludes: "Their use as the drugs of choice when bacterial sensitivity studies are not available was recommended."

Reserpine in Arthritis and Delirium Tremens

Reserpine (Serpasil) shortened the time necessary to free 24 alcoholic patients from the agitation and hallucinations of delirium tremens—21 in 24 hours and 3 in 48 hours, according to Drs. M. Avol and P. J. Vogel in the Dec. 17, 1955, issue of *J.A.M.A.* About half of 30 patients with various types of arthritis showed some improvement when treated with reserpine, states Dr. H. Bartfeld in the same report. Reserpine was of greater value in psychogenic rheumatism than in other types.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FDA Criminal Actions

DURING THE MONTH OF FEBRUARY 1956

Over-the-Counter Sales

Miami, Fla.—Refilling prescriptions for amphetamine and barbiturates without physicians' authorizations. Employee fined $100 in January; case pending against owner.

(Truck terminal) Claxton, Ga.—Selling amphetamine without physicians' prescriptions. First defendant fined $1,000 and placed on probation for 2 years; second defendant given a 2-year jail sentence.

Sioux City, Iowa—Selling amphetamine without physicians' prescriptions. Given a 6-month suspended jail sentence and placed on probation for 2½ years.

Philadelphia, Pa.—Selling barbiturates, sulfonamides, and thyroid without physicians' prescriptions. Fined $900 and placed on probation for 3 years.

Summerton, S.C.(truck stop)—Selling amphetamine without physicians' prescriptions. Owner fined $300; 3 employees fined $50 each.

Summerton, S.C.(truck stop)—Selling amphetamine without physicians' prescriptions. Owner fined $300; employees fined $50 each.

Anderson, S.C.—Selling amphetamine without physicians' prescriptions. One individual fined $1,000, $700 of which was suspended, given a 1-year suspended jail sentence, and placed on probation for 3 years; two others placed on probation for 2 years each.

Bishopville, S.C.—Selling amphetamine without physicians' prescriptions. Given a $100 suspended fine and a 12-month suspended jail sentence, and placed on probation for 3 years.

Wylliesburg, Va.—Selling amphetamine without physicians' prescriptions. Owner fined $250, given a 1-year suspended jail sentence, and placed on probation for 3 years; employee given a 6-month suspended jail sentence and placed on probation for 1 year.

Amarillo, Tex.—Selling amphetamine and barbiturates without physicians' prescriptions. Charges against firm dismissed; individual given a 5-month jail sentence. (Sentenced in December but not previously reported.)

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CONSIDER THE FUTURE—

Insurance is purchased *now* to take care of a need which may arise in the future.

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Have Enough Insurance
Have Good Insurance

Consult Our Agent

FDA Ruling on Acetylcarbromal and Bromural

In 1942, on the basis of evidence received at a public hearing, regulations were promulgated designating the drugs acetylcarbromal (Abasin—Winthrop; Sedamyl—Schenley) and bromisovalum NF (Bromural—Bilhuber-Knoll; Isoval—Mission Pharmacal), or mixtures (Sedayson—Tailby-Nason) as habit-forming chemical derivatives of carbromal. A petition has now been filed to remove the drugs acetylcarbromal and bromisovalum from the list of drugs designated as habit forming. Such removal would mean that drugs containing acetylcarbromal or bromisovalum will no longer be required to bear the legend "Warning—may be habit forming."

Evidence received at FDA hearings consisted of a survey of medical literature, an affidavit of a medical practitioner describing the administration of a drug containing acetylcarbromal and bromisovalum to 37 patients for varying periods of time up to 22 weeks, and a record relating to the use of a drug containing a mixture of these chemicals in a clinical study involving 40 subjects.

In the literature survey only 2 of the sources cited referred to tendencies of the drugs to cause addiction or habit formation. The affidavit of the medical practitioner contained no reference to the criteria applied by the author to determine the existence of habit-forming tendencies. In addition, the nature of the observations and the manner in which control was exerted were not readily evident.

The clinical study involving the 40 subjects had the following defects:

(a) The criteria utilized for the determination of the existence of habit-forming tendencies were not appropriate for that purpose.

(b) The study was conducted on ambulatory patients. The use of such patients is not satisfactory in a clinical study dealing with habit-forming tendencies of a drug since control of the intake of the drug under study, as well as drugs having similar physiological effect, is almost impossible with ambulatory patients.

(c) The study as originally reported made only ambiguous references to prior use of sedative drugs by the subjects—an important factor in determining the tendency of a drug to habit formation.

(d) Observations for withdrawal symptoms were not begun until one week after the termination of administration of the drug under study. It is possible that withdrawal symptoms might have begun and ended before the first observation, after termination of administration was made.

The record included expert medical testimony that sedatives such as the drugs acetylcarbromal and bromisovalum, or a combination of them, are or may be habit forming and that their label should bear a statement to that effect.

It was concluded that the whole record does not warrant the removal of the drugs acetylcarbromal and bromisovalum from the list of drugs that are required to bear the label statement "Warning—May be habit forming." It was therefore ordered, That Part 165—Certain Chemical Derivatives of Substances Named in Section 502 (d) of the Federal Food, Drug, and Cosmetic Act Designated as Habit Forming not be amended.

A.A.C.P. Publication Re-Styled

A re-styled *American Journal of Pharmaceutical Education* has made its appearance under the direction of Dr. Melvin R. Gibson of Washington State College. Dr. Gibson assumed the duties of editor of the Journal on January first, and the recently released *Winter* issue of its twentieth annual volume will be appropriately followed by *Spring*, *Summer* and *Fall* issues.

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New and nonofficial Remedies

NNR Supplemental Statements by A.M.A. Council on Pharmacy and Chemistry

♦ **Hydrocortisone Acetate suspension** containing 25 mg. per cc. is injected in a dose of 0.3–0.5 cc. directly into the cyst cavity for treatment of aponeurotic or tendon cysts (ganglions).

♦ **Isoproterenol Hydrochloride** orally inhaled as a 1:200 solution is useful as an adjunct in symptomatic treatment of chronic pulmonary emphysema to relieve bronchospasm, shrink swollen mucous membranes, and reduce the secretion of mucus.

♦ **Ophthalmic Use of Erythromycin.** The NNR monograph on erythromycin has been amended to recognize the use of the ophthalmic ointment containing 5 mg. per Gm. The ophthalmic ointment may be applied to the infected eye one or more times daily. Mild, transient reactions to ophthalmic application have occurred occasionally.

♦ **Selenium Sulfide jelly 0.5%** is considered suitable for the management of noninflammatory, nonexudative seborrhea of the eyebrows, eyelids, external ear, and glabrous skin.

♦ **Xanthine derivatives,** other than caffeine, are recognized for the limited use of aminophylline and other theophylline compounds as vasodilators in angina pectoris and coronary disease.

Items Recently Evaluated by the A.M.A. Council on Pharmacy and Chemistry

BENZTROPINE METHANESULFONATE—Cogentin Methanesulfonate (Merck, S. & D.)—A parasympatholytic agent with chemical features of atropine and certain antihistaminic drugs, benztropine methanesulfonate exhibits anticholinergic, antihistaminic, and local anesthetic properties. The dosage in paralysis agitans is 1–2 mg. daily with a range of 0.5 to 6 mg. Initially a single dose of 0.5–1 mg. with increments of 0.5 mg. every few days to optimal tolerated dosage. Change from other medication should be gradual.

CRYSTALLINE TRYPSIN—Tryptar (Armour)—A purified preparation of the pancreatic enzyme derived from mammalian

(*Continued on page 244*)

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"In Convention Assembled"

THIS issue of the JOURNAL will be on its way to the press while members of the AMERICAN PHARMACEUTICAL ASSOCIATION are "in convention assembled" at Detroit, Michigan, and acting on some of the more important problems now engaging the attention of the profession.

One of the strengths of the AMERICAN PHARMACEUTICAL ASSOCIATION lies in its ability to furnish points of contact for all segments of the pharmacal profession and the drug industry.

At no time or place is there as much opportunity for an interchange of information and points of view as is furnished through the annual meetings of the ASSOCIATION. In our large convention centers where members of the American Association of Colleges of Pharmacy, National Association of Boards of Pharmacy, the American Society of Hospital Pharmacists, the American College of Apothecaries, the National Conference of State Pharmaceutical Association Secretaries, the American Institute of the History of Pharmacy, and the practitioners of the profession who operate our retail pharmacies meet, first as separate groups and then as a united body in the A.PH.A. general sessions and section meetings for a period of six or seven days, the opportunity to mingle and converse is unequaled.

Advance reports of committees and addresses of outgoing and incoming officers indicate that no phase of intra- and interprofessional relations will be overlooked in the discussions.

The streamlining of the program of the meetings of the House of Delegates of the A.PH.A., in which all of these groups have representation, is bound to offer more opportunity for discussions than ever before.

The May issue of THIS JOURNAL will carry the report of the Convention in considerable detail and the resolutions will be published in full with comment as to their implementation by action of the Council following the Convention. It is hoped, also, that the addresses of the President, the President-elect and the Chairman of the House of Delegates will be published in that issue.

Advance information with regard to registration of active members indicates that it will be well over 1,500 and that pharmacy student attendance with representation from many schools will bring the total close to 2,000.

The significance of these annual conventions lies in the fact that they furnish a common meeting ground which is fully utilized by both the industry and the profession to renew personal contacts and to learn to appreciate what lies behind the thinking and proposed actions of all groups. In addition to the formal meetings which offer opportunities for presentation of papers and their discussion, there are the "corridor conferences" and the unofficial meetings during the week which give opportunity for continuation of discussions that are seldom completed at the formal sessions.

The Incoming President

On the front cover of this issue of the JOURNAL there is a portrait of our incoming President whose experience as a pharmacist encompasses both retail and manufacturing pharmacy. For a number of years, as director of the professional and trade relations activities of Parke, Davis and Company, he has traveled all over the United States, contacting practitioners of pharmacy at their state conventions and at local and district meetings.

He is the first representative of manufacturing pharmacy to serve as President of this ASSOCIATION since 1930. He served our ASSOCIATION as First Vice President in 1953–54 and as Second Vice President in 1951–52. He has therefore had several years of experience as a member of the Council and he has also given service as

Chairman and Secretary of the Section on Pharmaceutical Economics.

His familiarity with the points of view and background of those engaged in all phases of pharmaceutical practice is unusual and very comprehensive. We can look forward, therefore, to a grasp of the present needs of American pharmacy on his part which should be most helpful to the membership of the ASSOCIATION as he is called upon to state and expound the policies of our ASSOCIATION.

The Retiring President

We are also pleased to pay tribute to our retiring President, John B. Heinz, whose willingness to give of his time and talents in the high office which he has held during the past year and in other posts to which he has been called in recent years in behalf of this ASSOCIATION, have marked him as one of pharmacy's outstanding leaders in the field of retail prescription practice.

With nearly 300 papers and reports to come to the attention of those who will attend the Detroit Convention, we are certain that it will be a busy week and that those in attendance will return to their respective tasks better informed and more conscious of the important niche which the profession of pharmacy occupies in the field of health and medical care.

Dr. Martin Becomes Editor

WITH this issue of the JOURNAL, the office of editor is being turned over to Dr. Eric W. Martin. He comes to the AMERICAN PHARMACEUTICAL ASSOCIATION from the University of Pennsylvania where he has recently been engaged in a special classified governmental research project.

The Council of the ASSOCIATION has been looking for a well qualified man for this post for several years. In listing the qualifications for this important position it was stated that the editor of THIS JOURNAL must be a man with a basic training in pharmacy and broad scientific, professional and cultural background. He must be thoroughly familiar with the problems of the practicing pharmacist as well as of the drug industry and be able to produce and supply factual, authentic and usable information which will enable pharmacists to keep abreast of the rapidly changing developments in medical care, public health, the practice of medicine and pharmacy, and in the allied sciences and professions.

A careful search for someone who could qualify in this capacity resulted in a recent invitation to Dr. Martin to accept the editorship. He holds degrees in pharmacy and the degree of doctor of philosophy in organic chemistry. In addition to pharmacy his major studies include biochemistry, analytical chemistry and phytochemistry. He engaged in prescription practice at the retail pharmacy level for eleven years and worked for some years with LaWall and Harrisson in bacteriological, pharmacological and chemical research. He has been a teacher at the Philadelphia College of Pharmacy and Science and is probably best known as editor of *Remington's Practice of Pharmacy* and his association with Dr. E. F. Cook in this capacity as well as in pharmacopeial revision work.

We extend a hearty welcome to Dr. Martin as a member of the Headquarters Staff and bespeak for him the full cooperation of our officers and members in his efforts to make THIS JOURNAL ever more responsive to the needs of the practitioners of our profession.

Mack Printing Co. Announces Change in Officers

THE announcement by the Mack Printing Co. that Harvey F. Mack has been made Chairman of the Board of Directors and Cyrus S. Fleck has been elected President as of March 3, 1956, recalls the remarkable growth of this organization which has devoted its facilities to the publication of scientific and professional journals over a long period of years. This company has printed our journals for many years as well as several editions of the *National Formulary*.

The elevation of Mr. Fleck to the presidency of the Mack Printing Co. is a well-deserved recognition of his close affiliation with the publication management of various national organizations in the scientific, professional and engineering fields and of his part in the efficient direction of the affairs of this organization.

To Harvey F. Mack, who saw the possibilities of specializing in the printing of scientific publications many years ago, there must come a feeling of great satisfaction in witnessing the growth and splendid reputation which his organization has achieved while contributing so much to the progress of his clients and their scientific endeavors.

THE NEW OFFICIAL DRUGS

by William L. Weingold*

THIS is a companion article to *The New Official Drugs—U.S.P. XV*, appearing in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, *Practical Pharmacy Edition*, **17**, 156(March 1956). As stated in the introduction to the initial article, "It is the purpose of this series of articles to discuss, within severe limitations on space, the salient pharmacologic attributes of the new drugs, the recommended dosages, their major therapeutic uses, and to present *in some measure* the proprietary and/or trade names under which they are available." The manner of presentation is identical in both articles.

The 131 drugs formerly official in the U.S.P. XIV and now recognized by the N.F. X are not discussed because they are not actually new official drugs within the sense of this article. There are a total of 136 drugs which have received official recognition for the first time. Of this number, 76 represent new substances.

ACETYLSALICYLIC ACID, ACETOPHENETIDIN AND CAFFEINE CAPSULES; —TABLETS.—These articles give official status to the popular combination known as "Aspirin, Phenacetin and Caffeine," or simply as "APC." The acetylsalicylic acid and acetophenetidin act synergistically, and the caffeine appears to enhance the overall analgetic effect in clinical usage. The combination is indicated as an analgetic antipyretic for relief of pain and discomfort associated with simple headache, neuralgia, the common cold, rheumatic conditions, dysmenorrhea, and tooth extraction.

Category, Analgetic. *Usual dose*, of Acetylsalicylic Acid, 300 mg.; of Acetophenetidin, 300 mg.; of Caffeine, 200 mg.

Commercial source, Acetidine (Sharp & Dohme); A.S.A. Compound (Lilly); As-Ca-Phen (Ulmer); Bowphen (Bowman); Empirin Compound (Burroughs-Wellcome); P.A.C. (Upjohn); also available from various manufacturers under the official title or an official synonym.

ALLYLBARBITURIC ACID; —TABLETS.—Allylbarbituric Acid (allylisobutylbarbituric acid) is a barbiturate of intermediate duration, which usually shows an onset of action within $^1/_2$ to 1 hour, with effects lasting 4 to 6 hours or more. It is useful for simple insomnia where sleep comes easily but is disturbed by nocturnal or very early morning awakening.

Category, Central depressant. *Usual dose*, 200 mg.
Commercial source, Sandoptal (Sandoz).

AMPHETAMINE PHOSPHATE; —INJECTION; —TABLETS.—Amphetamine Phosphate is the racemic salt of phosphoric acid in which one of the three hydrogen atoms of the acid is neutralized by amphetamine base. Its aqueous solution is acidic in reaction.

It is used for the same purposes as amphetamine sulfate, that is, treatment of narcolepsy, postencephalitic parkinsonism, as an adjunct in the treatment of alcoholism, and in the treatment of certain depressive conditions to renew the patient's interest and optimism, and to restore his capacity for physical and mental effort. It should be used with caution in patients hypersensitive to ephedrine-like compounds, in cases of coronary or cardiovascular disease, and in the presence of severe hypertension.

The Injection is a sterile solution in water for injection. Apparently the phosphate was chosen for the Injection because it is more soluble than the sulfate.

Because of the lower content of amphetamine base in the phosphate, as compared to the sulfate, 12.6 mg. of the phosphate is calculated to be equivalent to 10 mg. of the sulfate. On this basis, doses of Amphetamine Phosphate should be approximately 25% greater than those of amphetamine sulfate for an equivalent effect. For most purposes, however, Amphetamine Phosphate is actually used in the same dose as amphetamine sulfate.

Category, Central stimulant. *Usual dose, oral*, 5 mg., *intramuscular* or *intravenous*, to be determined by the physician according to the needs of the patient.

Commercial source, Monophos (Harvey); Profetamine Phosphate (Clark & Clark); Racephen (Ives-Cameron); Raphetamine Phosphate (Strasenburgh). It is also available in bulk from: Arenol Chem. Corp., Gale Chem. Corp., and Mann Fine Chem.

AMPHETAMINE PHOSPHATE, DIBASIC; —TABLETS.—Dibasic Amphetamine Phosphate is the racemic salt of phosphoric acid in which two of the hydrogen atoms of the acid are neutralized by amphetamine base. This salt contains approximately 25% more amphetamine base than amphetamine phosphate, and thus is equivalent to amphetamine sulfate when equal weights of the two

* Instructor in Pharmacy, Columbia University College of Pharmacy, New York, N.Y.

Part II—N.F.X

Reprints of this article may be ordered from the AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, Washington 7, D. C.

(Part I—See March issue)

are compared. Its aqueous solution is neutral. At present there are no commercial products listed consisting of this salt alone; however, it is being used in combination in many specialties.

Category, Central stimulant. *Usual dose, oral,* 5 mg.

Commercial source, Bulk powder (Arenol Chem. Corp., Gale Chem. Corp., Mann Fine Chem.).

d-AMPHETAMINE PHOSPHATE; —TABLETS.—This is the dextrorotatory isomer of amphetamine phosphate. Its actions and uses are the same as those for amphetamine phosphate; however, the dextro isomer is about twice as active in its central stimulant effects as the racemic form of the drug. On this basis, the usual dose of the dextro isomer should be about half that of racemic monobasic amphetamine phosphate, but the N.F. does not make this distinction.

Category, Central stimulant. *Usual dose,* 5 mg.

Commercial source, Dextro-Profetamine Phosphate (Clark & Clark); Bulk powder (Arenol Chem. Corp., Gale Chem. Corp., Mann Fine Chem.).

d-AMPHETAMINE PHOSPHATE, DIBASIC; —TABLETS.—This is the dextrorotatory isomer formed by the neutralization of two hydrogen atoms of phosphoric acid by amphetamine base. This compound, which combines the higher central stimulant effects of the dextro isomer with the higher proportion of amphetamine base, has the same actions and uses as *dextro*-amphetamine sulfate, both salts containing the same proportion of active base.

Category, Central stimulant. *Usual dose,* 5 mg.

Commercial source, Bulk powder (Arenol Chem. Corp., Gale Chem. Corp., Mann Fine Chem.).

APROBARBITAL.—Aprobarbital (allylisopropylbarbituric Acid) is a barbiturate of intermediate duration of action whose hypnotic effects last from 6 to 8 hours due to relatively slow urinary excretion and degradation. In small doses (15 to 30 mg.) it is a useful daytime sedative, while larger doses produce a hypnotic effect.

The N.F. recognizes only the acid, which is very slightly soluble in cold water, but is adaptable for use in the preparation of elixirs. The sodium salt, which is recognized by the N.N.R., may be obtained in bulk.

Category, Central depressant. *Usual dose,* 60 mg.

Commercial source, Alurate (Hoffmann-La Roche); Bulk powder (Chemo Puro).

AUROTHIOGLUCOSE; —INJECTION.—Aurothioglucose (gold thioglucose) is a water-soluble, oil-insoluble gold compound used for the treatment of active rheumatoid arthritis and nondisseminated lupus erythematosus. The gold-to-sulfur linkage favors slow absorption of the gold, which decreases the incidence of untoward reactions.

The Injection is a *sterile suspension* of Aurothioglucose, with or without a suitable thickening agent, in a suitable fixed oil. Sesame oil is usually used in this product.

The preparation is contraindicated in nephritis, hepatic disease, anemia, hemorrhagic tendency, blood dyscrasias, acute rheumatic fever, tuberculosis or in acute disseminated lupus erythematosus.

The usual dose is misleading in that the product is administered weekly, starting with a dose of 10 mg., and gradually building up the weekly dose until the patient has received a total of 1 Gm. After the patient has reached this limit, maintenance doses of 50 mg. may be administered at intervals of 2 to 4 weeks.

Category, Antirheumatic. *Usual dose, intramuscular,* 50 mg.

Commercial source, Solganal (Schering).

BROMISOVALUM; —TABLETS.—This consists chiefly of *alpha*-bromisovaleryl urea with trace amounts of the next higher and lower homologues and their isomers. It is a rapidly acting sedative and mild hypnotic with effects lasting from 3 to 5 hours. It is particularly useful for daytime sedation to control anxiety states and to sedate patients sensitive to barbiturates or bromides. The bromine in this compound is in firm organic combination (not as a bromide).

Category, Central depressant. *Usual dose,* sedative, 300 mg., hypnotic, 600 mg.

Commercial source, Bromural (Bilhuber-Knoll); Isoval (Mission Pharm.).

BUTALLYLONAL; —TABLETS.—Butallylonal is a barbiturate of intermediate duration of action which produces effects in about $^1/_2$ hour. Although it is used primarily to combat insomnia, it has been recommended for preanesthetic medication. It is well absorbed in the acid form or as the sodium salt.

Category, Central depressant. *Usual dose,* 200 mg.

Commercial source, Pernoston (Ames).

BUTETHAL; —TABLETS.—Butethal is a barbiturate of intermediate duration of action which is similar to amobarbital. It is substantially more potent than barbital and is most frequently employed as a hypnotic agent. Not more than 400 mg. should be administered during a 24 hour period.

Category, Central depressant. *Usual dose,* 100 mg.

Commercial source, Neonal (Abbott).

BUTETHAMINE HYDROCHLORIDE; —AND EPINEPHRINE INJECTION.—Butethamine Hydrochloride is a local anesthetic widely used for nerve block anesthesia in dentistry and other surgery. Its effects are qualitatively identical with those of procaine hydrochloride; however, butethamine produces one-third more anesthetic and toxic potency than does an equal amount of procaine. It is used in about three-fourths the dosage of procaine hydrochloride for the purposes mentioned. (A 1.5% solution of Butethamine Hydrochloride is equivalent to 2% procaine hydrochloride.) Present evidence does not warrant its use for topical anesthesia of mucous or other membranes.

The Injection is a sterile solution in water for injection. The epinephrine produces vasoconstriction which aids in prolonging the anesthetic action.

Category, Local anesthetic.

Commercial source, Monocaine Hydrochloride (Novocol).

BUTYL CHLORIDE.—Butyl Chloride is a clear, colorless, volatile liquid recognized by the N.F. as a veterinary anthelmintic. The N.F. cautions, "*Butyl Chloride is very flammable. Do not use where it may be ignited.*" It is used in the dog and horse for the removal of roundworms, hookworms and whipworms. In the horse it is also used for curing strongylosis. It is usually administered in capsule form preceded by an 18 to 24 hour fast, and followed in 30 minutes by a cathartic dose of castor oil.

Category, Anthelmintic (veterinary). *Usual dose* (based on the weight of the animal)—Horses, 15 to 90 ml., Dogs, 1 to 24 ml.

Commercial source, Puppy Worm Capsules, Sure Shot Worm Capsules (Sergeant's); Bulk chemical (Carbide and Carbon, R. W. Greeff, Mayco Chem. Co., Meta Chem. Co.).

CARBOL-FUCHSIN SOLUTION.—This is a stabilized preparation of the original fuchsin formula known as Castellani's paint. It is widely employed for topical application to superficial fungus infections of the skin. It should be used only in subacute or chronic dermatophytoses. The product is of value for epidermophytosis interdigitalis pedum (athlete's foot), and is effective for *Tinea trichophytina* (ringworm) and *Tinea embricata* (gogo or scaly ringworm of the tropics). As with many other dyes, the preparation will stain clothing.

Category, Antifungal.

Commercial source, Carbol-Fuchsin Paint (Veltex); Carfusin (Rorer); Castellani's Paint (various manufacturers).

CHOLINE BITARTRATE; —CAPSULES; —TABLETS;—CHOLINE DIHYDROGEN CITRATE; —CAPSULES; —TABLETS.—The base *choline* is a structural component of certain phospholipids (lecithins), which are found in nearly all body tissues, as well as in several secretions. It is also the parent substance of acetylcholine, which is concerned with transmission of nerve impulses. Current interest in choline concerns its lipotropic action and its role as a donor of methyl groups in metabolic processes.

Dietary treatment suggests that choline is effective as an adjunct in the treatment of fatty infiltration and early cirrhosis of the liver. The therapeutic efficacy of choline is in some doubt due to the lack of adequately controlled experimental conditions. Recently, the choline salts have been employed in the treatment of atherosclerosis, arteriosclerosis, heart disease and various disorders of lipid metabolism; however, there are many conflicts in the clinical findings.

Choline Bitartrate represents 47.8% of choline; it is the least hygroscopic of the salts and is most suitable for tablet and capsule formulations, whereas it is not well suited for liquid formulations due to its lower solubility in water than other choline salts. Choline Dihydrogen Citrate represents 41% of choline, and is used both in liquid and dry formulations. Choline chloride, which is official in the *International Pharmacopoeia,* represents 86.8% of choline, is very hygroscopic, and is only suitable for liquid dosage forms.

Category, Lipotropic. *Usual dose,* 2 Gm.

Commercial Source—Choline Bitartrate, (Amer. Cyanamid, Chemo Puro, Gane & Ingram, R. W. Greeff, Hilton Davis Chem. Co., Hoffman Labs., N.Y. Quinine & Chem. Works, Winthrop); —*Choline Dihydrogen Citrate,* Chothyn (Flint, Eaton); Choline Dihydrogen Citrate (Abbott, Associated Labs., Horton & Converse, Lilly, Parke-Davis, Physicians' Drug & Supply Co., Sherman, U.S. Vitamin, Walker Labs.); Bulk powder (Associated Labs., Chemo Puro, City Chem., Cole Chem., Delta, Gane & Ingram, International Chem., Mann Fine Chem.).

COBALAMIN CONCENTRATE.—Cobalamin Concentrate (Vitamin B_{12} Activity Concentrate) consists of the dried, partially purified product resulting from the growth of selected *Streptomyces* cultures or other cobalamin-producing microorganisms. It may contain harmless diluents and stabilizing agents. It contains in each Gm. not less than 500 mcg. of cobalamin activity. The Concentrate occurs as pink to brown granules or as a fine powder.

The Concentrate contains cyanocobalamin (vitamin B_{12}) or closely related cobalamins, and represents a less purified form of the vitamin suitable for many oral formulations. Since this product is not as highly purified as cyanocobalamin, it is less costly than the pure vitamin. The product may be used in formulations where Vitamin B_{12} activity is desired.

Category, Vitamin supplement.

Commercial source (Amer. Cyanamid, Mallinckrodt, Merck, N.Y. Quinine and Chem. Works, Pfizer).

CYCLOBARBITAL; —TABLETS.—Cyclobarbital is a barbiturate with a short duration of action. It is useful for insomnia in which the patient has difficulty in falling asleep; but once sleep is achieved, it is undisturbed. It is also used for preoperative and postoperative sedation. Cyclobarbital will produce sleep within one-half hour, and its effects disappear within 4 to 6 hours, the compound being largely destroyed in the body.

Category, Central depressant. *Usual dose,* 200 mg.

Commercial source, Phanodorn (Winthrop).

DANTHRON.—Danthron is a cathartic compound closely related to emodin chemically, which exerts a pronounced action on the large intestine. The drug is eliminated as a harmless dye which may

color the urine pink or red. The action is slow, usually beginning in from 12 to 36 hours, and is seldom accompanied by griping. Being tasteless and odorless, it is easily administered in food. It has, on occasion, been administered to adult humans in doses of 130 to 500 mg. at bedtime.

Category, Cathartic (veterinary). *Usual dose,* to be determined by the veterinarian according to the species and need of the animal.

Commercial source, Dorbane (Schenley); Istin (Bayer); Istizin (Winthrop).

DIALLYLBARBITURIC ACID; —TABLETS.—This is a barbiturate with intermediate duration of action. When administered orally, it induces sleep in one-half to one hour, and its effects last from 6 to 8 hours. The product is used for daytime sedation, preoperative sedation, and as a hypnotic.

Category, Central depressant. *Usual dose,* 200 mg.

Commercial source, Diadol (Buffington); Dial (Ciba).

DIHYDROCODEINONE BITARTRATE; —SYRUP; —TABLETS.—Dihydrocodeinone Bitartrate has essentially the same actions as codeine salts. When compared with codeine on a weight basis, it is more active and more addicting. It is primarily useful as an antitussive. The N.F. recognizes tablets and also gives a formula for the preparation of a syrup which contains 10 mg. of dihydrocodeinone bitartrate in each 4 ml.

Category, Antitussive. *Usual dose,* 10 mg.

Commercial source, Bi-Co-Tussin (Bischoff); Dicodid (Bilhuber-Knoll); Hycodan (Endo); Mercodinone (Merrell); Stodcodon (Stoddard).

DIHYDROXYALUMINUM AMINOACETATE; —MAGMA; —TABLETS.—Dihydroxyaluminum Aminoacetate is an orally effective gastric antacid which is useful for the control of hyperacidity in the management of peptic ulcer. Its properties are similar to those of aluminum hydroxide gel preparations, but the claims of superiority of this preparation over the latter have not been conclusively established.

Dihydroxyaluminum Aminoacetate is claimed to provide both immediate and prolonged neutralization of gastric acidity. This is due to the difference in the neutralization times of the amino group and of the two hydroxyl groups. Since there is less aluminum in this compound than in the same weight of aluminum hydroxide, it is said to produce less constipation.

The N.F. permits the magma to be stabilized by use of appropriate suspending agents and preservatives, and to be suitably flavored.

Category, Antacid. *Usual dose,* 500 mg.

Commercial source, Ada-Tabs (Harvey); Alglyn (Brayten); Alkam (First Texas); Alminate (Bristol); Alzinox Magma & Tabs (Patch); Aspogen (Eaton); Dimothyn (Flint, Eaton); Doraxamin Susp. & Tabs (Smith-Dorsey); Robalate (Robins).

DIMETHYL TUBOCURARINE IODIDE; —INJECTION.—Dimethyl Tubocurarine Iodide, like tubocurarine chloride, is used to relax skeletal muscles by action on the myoneural junction. Compared to tubocurarine chloride, Dimethyl Tubocurarine Iodide is about three times as active. It produces less respiratory depression and the duration of action is more prolonged.

It is used to produce muscle relaxation during surgical and orthopedic manipulative procedures. It has also been used to reduce the violence of muscular contractions during pentylenetetrazol or electric shock therapy. The Injection is a sterile solution in isotonic sodium chloride solution, and its potency is stated in milligrams of N.F. Dimethyl Tubocurarine Iodide Reference Standard.

As with other curare-like drugs, it is contraindicated in cases of respiratory depression, advanced pulmonary disease, serious circulatory impairment, and myasthenia gravis (except as a diagnostic test).

Category, Skeletal muscle relaxant. *Usual dose,* to be determined by the physician according to the needs of the patient.

Commercial source, Metubine Iodide (Lilly).

DROCARBIL.—Drocarbil is the acetarsone salt of arecoline. It is employed for the treatment of tapeworm infestations in the dog and cat. A light meal immediately before treatment will generally prevent the occurrence of nausea and vomiting. The action normally develops rapidly, but if no effect is obtained within 2 hours, a purgative dose of castor oil or an enema may be necessary. Since the drug shows a powerful cathartic effect it must be used carefully in dogs and cats. It is contraindicated in puppies under 3 months old or cats under 1 year.

Category, Anthelmintic (veterinary). *Usual dose,* to be determined by the veterinarian according to the species and need of the animal.

Commercial source, Nemural (Winthrop).

ESTRADIOL INJECTION, AQUEOUS; —PELLETS.—Estradiol and Estradiol Tablets were admitted to the N.F. from U.S.P. XIV. The Aqueous Injection and Pellets represent recognition of new dosage forms.

Estradiol is considered to be the form of the estrogenic hormone produced by the human ovary and is one of the more potent of the known compounds having estrogenic activity. It has been isolated with a less potent stereoisomer. The more active isomer, usually referred to as estradiol, was originally specifically called *alpha*-estradiol, while the less active isomer was designated *beta*-estradiol. The difference between the two isomers is the orientation of the hydroxyl group at carbon atom 17. Since rules of nomenclature require that front orientation (above the plane of the ring system) be designated *beta*, and rear orientation *alpha*, the isomer originally called *alpha*-estradiol is really 17-*beta*-estradiol, while the original *beta*-estradiol is actually 17-*alpha*-estradiol. This accounts for the change of nomenclature of these compounds in the N.F.

Estradiol is principally used to provide symptomatic relief of menopausal and other forms of ovarian deficiency; to inhibit lactation; to palliate inoperable cancer of the prostate or cancer of the breast following the menopause; to stop functional uterine bleeding; to treat threatened or habitual abortion; and various other conditions.

As estradiol is almost insoluble in water, the Injection represents a sterile *suspension* of estradiol in water for injection. Due to various methods of manufacture, the commercially available injections vary in the particle size of the suspended estradiol. Intramuscular injection of the aqueous suspension

produces a somewhat more prolonged effect than does injection of the solution in oil.

The Pellets consist of estradiol in the form of pellets, without the presence of any binder, diluent or excipient. As they are to be used by implantation, the N.F. requires freedom from any material other than estradiol and, in addition, requires that the Pellets be sterile. This dosage form offers a continuous estrogenic effect over a period of several months. Implantation of three 25-mg. pellets will usually produce estrogenic action for a period of 9 to 15 months.

Category, Estrogen. *Usual dose, oral,* 200 mcg., *intramuscular,* 250 mcg.; *implantation,* to be determined by the physician according to the needs of the patient.

Commercial source—Injection, Altrad (Ascher); Aquadiol (National); Aquagen (Lemmon); Aquiol (Estro); Bardiol (Barry); Diogyn (Pfizer); Estraldine (Rorer); Femestral (Kirk); Femogen Aqueous (Testagar); Macrodiol (Kirk & Gotham); Microdiol (Gold Leaf); Progynon (Schering); Syndiol (Central); also available under its official title from numerous manufacturers; *—Pellets,* Progynon Pellets (Schering).

ETHYL VANILLIN.—Ethyl Vanillin is a synthetic compound used as a flavor and said to have value as a preservative. It possesses a finer and more intense vanilla-like odor and taste than that of vanillin. [Ethyl vanillin should not be confused with *ethyl vanillate,* which has been used as a fungicide and for treatment of histoplasmosis.]

Category, Flavor.

Commercial source (Fritzsche Bros., Magnus Mabee & Reynard, Monsanto, Sterwin Chem. Co., R. W. Greeff).

FUCHSIN, BASIC.—Basic Fuchsin is a mixture of rosaniline and pararosaniline hydrochlorides. It is sometimes referred to as "Basic Magenta." The N.F. recognizes it as an ingredient of carbol-fuchsin solution. Fuchsin is a powerful germicide comparable to phenol in efficiency. Like many other dyes, it stimulates granulation and epithelization. It has been used favorably in treating varicose ulcers, burns, granulating wounds of various kinds, and impetigo.

Category, Pharmaceutical necessity; ingredient of Carbol-Fuchsin Solution.

Commercial source (Matheson, Coleman & Bell).

GLYCOBIARSOL; —TABLETS.—Glycobiarsol is an agent used for the treatment of intestinal amebiasis. It is only slightly soluble and poorly absorbed, which accounts for its low toxicity as well as the fact that its usefulness is restricted to the intestinal form of the disease. It has also been used successfully in the treatment of trichomonal and monilial vaginitides.

The presence of bismuth in the compound tends to reduce diarrhea; whereas the arsenic necessitates caution in its use in patients hypersensitive to arsenicals.

Category, Antiprotozoan. *Usual dose,* single, 500 mg.; daily, 1.5 Gm.

Commercial source, Milibis (Winthrop).

GOLD SODIUM THIOMALATE; —INJECTION.—This is a water-soluble gold compound used for the treatment of active rheumatoid arthritis and nondisseminated lupus erythematosus. Against rheumatoid arthritis it is said to be most effective in the early stages before development of extensive deformities. The Injection is a sterile solution in water for injection. (For contraindications and method of administration see Aurothioglucose.)

Category, Antirheumatic. *Usual dose,* to be determined by the physician according to the needs of the patient.

Commercial source, Myochrysine (Sharp & Dohme).

HEXESTROL; —INJECTION; —TABLETS.—Hexestrol is a synthetic estrogen which shares the uses and contraindications of the natural estrogens (see Estradiol). Toxicity and potency are less than with diethylstilbestrol. As with all estrogenic substances, the dosage must be adjusted to the individual case. The Injection is a sterile solution of hexestrol in oil or in other suitable solvent.

Category, Estrogen. *Usual dose,* to be determined by the physician according to the needs of the patient; *Dose range,* 200 mcg. to 3 mg.

Commercial source, Injection (Merrell); *Tablets* (Associated Pharm., Cowley Pharm., Esta Medical Labs., Jan Labs., Massengill, Merrell, Vitamix); *Powder* (Mann Fine Chem., Herman Meyer).

HEXOBARBITAL SODIUM; —STERILE.—Hexobarbital Sodium is one of the most rapidly acting of all barbiturates, and is administered by intravenous injection. It has been used as a substitute for inhalation anesthesia in many types of surgical operations. Onset of action is extremely rapid, and in most cases consciousness is restored in 15 to 30 minutes, depending upon the amount of drug injected. Repeated doses are necessary for long operations. Due to individual variations in response, there is no standard dose for this product. In general, 2 to 4 ml. of a 10% solution will produce unconsciousness in the adult; this is injected intravenously at the rate of 1 ml. every 10 seconds.

Sterile Hexobarbital Sodium is the commercially available form of the drug. The powder is dissolved in water for injection immediately before use. The N.N.R. cautions, *"If the solution is discolored or shows the presence of undissolved particles, it should be discarded, even if it has been freshly prepared. The powder and solution undergo change on exposure to air and should not be kept for future use."*

Category, Intravenous general anesthetic. *Usual dose,* to be determined by the physician according to the needs of the patient.

Commercial source, Evipal Sodium (Winthrop); Evipan Sodium (Bayer); Cyclonal Sodium (May & Baker).

HYOSCYAMINE HYDROBROMIDE.—Hyoscyamine Hydrobromide is the hydrobromide of one of the naturally occurring alkaloids of hyoscyamus and related plants of the *Solanaceae.* Hyoscyamine is the *levo* component of the racemic mixture known as atropine. The N.F. cautions, *"Hyoscyamine Hydrobromide is extremely poisonous!"*

The actions of hyoscyamine are identical to those of atropine, differing only in degree. Its paralyzing effect on nerve endings is greater, while its stimulant action on the central nervous system is less than that of atropine. Peripheral activity is about

twice that of atropine. Its sedative and hypnotic action is less than that of scopolamine.

Therapeutically, hyoscyamine and its salts have been used for their sedative effects in the treatment of delirium tremens and mania; in parkinsonism to relieve tremor, rigidity and excessive salivation; to relieve the pain of neuralgia; and to prevent seasickness.

Category, Parasympatholytic. *Usual dose,* 0.25 mg. to 1.0 mg.

Commercial source, Bulk chemical (Inland Alkaloid Co., N.Y. Quinine & Chem. Works, Sandoz, S. B. Penick).

HYOSCYAMINE SULFATE.—Hyoscyamine Sulfate is the sulfate of one of the naturally occurring alkaloids of hyoscyamus and related plants of the *Solanaceae.* The N.F. cautions, "*Hyoscyamine Sulfate is extremely poisonous!*" (See Hyoscyamine Hydrobromide for discussion of actions.)

Category, Parasympatholytic. *Usual dose,* 0.25 mg. to 1.0 mg.

Commercial source, Levsin (Kremers-Urban).

INOSITOL; —TABLETS.—Although nine isomers of inositol are known, the optically inactive isomer, *i*-Inositol, or *meso*-Inositol, which is officially recognized by the N.F., is the only one that shows biological activity. It is considered to be a member of the vitamin B complex.

The need for inositol in human nutrition has not yet been demonstrated. It is a constituent of many tissues of the human body and is of medical interest because of the possibility that it may have useful lipotropic activity. In clinical studies it has been found to prevent or reduce fat deposition in the liver, and to reduce blood cholesterol and cholesteryl ester levels in the presence of hypercholesterolemia.

Category, Vitamin B complex vitamin; lipotropic. *Usual dose,* 2 Gm.

Commercial Source, Tablets (Associated Labs., Barth Levitt, Commercial Solvents Corp., House of Vitamins, Standard Process Lab., Testagar, Wm. T. Thompson, Vitamin Dist., Walker Labs., Webber Pharm.); *Powder* (Associated Labs., Barnes-Hind, City Chem., Delta, Jasonols, Mann Fine Chem., Silas, U.S. Vitamin).

IODINE SOLUTION, PHENOLATED.—Phenolated Iodine Solution, which is also known as Boulton's Solution, French Mixture and Carbolized Iodine Solution, is prepared by mixing strong iodine solution, liquefied phenol, glycerin and water. The liquid is placed in a strong, tightly stoppered, glass container and exposed to sunlight until it has become colorless or faintly yellow. Decolorization may also be accomplished by heating at a temperature not exceeding 70°.

The equation for the reaction that occurs in the preparation of this product is not definitely known. Some believe that a compound such as triiodophenol is formed, while others believe that the iodine is converted to hydrogen iodide. The solution is used undiluted as an antiseptic for application to wounds. It is also reported to be used as an antiseptic mouth wash when diluted with an equal volume of water.

Category, Antibacterial. *For external use,* Undiluted.

KAOLIN MIXTURE WITH PECTIN.—Kaolin Mixture with Pectin is a gastrointestinal adsorbent and demulcent which is useful for symptomatic relief in diarrhea. It is an aqueous suspension of kaolin and pectin with sweetening and flavoring agents. The pectin acts as a hydrophilic colloid and demulcent. It assists the tragacanth in stabilizing the suspension. Benzoic acid is used as the preservative. The preparation is similar to many of the commercially available products, which vary somewhat in the proportions of kaolin and pectin and in the flavors used.

Category, Adsorbent; demulcent. *Usual dose,* 30 ml.

LIDOCAINE; —HYDROCHLORIDE INJECTION.—Lidocaine is officially recognized as a necessity for the preparation of Lidocaine Hydrochloride Injection. The Injection is a sterile solution of lidocaine hydrochloride in water for injection.

The hydrochloride is a local anesthetic agent which is about twice as potent as procaine hydrochloride. It may be combined with epinephrine hydrochloride in order to delay absorption thereby prolonging its effects and reducing its toxicity. Its toxicity is similar to that of procaine in low concentrations (0.5%), but then exceeds procaine as the percentage strength increases. However, since the compound is twice as potent as procaine, it is considered to be a safer agent.

Lidocaine hydrochloride is useful for infiltration and block anesthesia during surgical procedures. In dental surgery, combined with epinephrine, it is reported to produce an adequate analgetic effect when other agents fail. It is effective topically on all mucous membranes, including the mouth, urethra and peritoneum. Although it has been used successfully for caudal, peridural and spinal anesthesia, more extensive trial by these routes is necessary before it can be accurately compared with older established agents.

Category, Local anesthetic.

Commercial source, Xylocaine Hydrochloride (Astra).

MANNITOL, —INJECTION.—Mannitol is a hexahydric sugar alcohol which occurs naturally in a number of plants, and may be prepared by electrolytic reduction of D-glucose. One Gm. of mannitol dissolves in about 5.5 ml. of water. The Injection is a sterile supersaturated (usually 25%) solution of mannitol in water for injection. It may require slight warming before use if crystallization has occurred.

Mannitol is filtered at the glomeruli, is only minimally reabsorbed, and is not excreted by the tubules. It may be used to measure the glomerular filtration rate.

Following administration by venoclysis, the concentration of mannitol in the blood plasma and urine, and a measurement of urine volume is taken at definite intervals. The glomerular filtration rate is the volume, in ml., of plasma that must have been filtered at the glomerulus to supply the amount of mannitol excreted in the urine per minute. The validity of the results obtained with mannitol is questioned by some investigators.

A 2.5% solution of mannitol in water is used as an irrigating fluid in transurethral resection of the prostate. Being nonhemolytic, its use eliminates the passage of hemolyzed blood into the circulation and the resulting hemoglobinemia caused by water alone. The presence of mannitol reduces serious renal complications considerably. The 2.5% solution is prepared by dilution of a vial of the 25% Injection.

Category, Diagnostic agent (kidney function).

Commercial source, Mannitol Solution (Sharp & Dohme).

MECHLORETHAMINE HYDROCHLORIDE, STERILE; —TRITURATION, STERILE.—Mechlorethamine is a derivative of the nitrogen analogue of the chemical warfare agent known as "mustard gas." The nitrogen analogues are generally termed "nitrogen mustards," and mechlorethamine is regarded as the most important member of the series. The compound is classified as a cytotoxic agent, that is, it inhibits mitosis and cell division in all germinal tissues. Certain neoplastic growths, particularly of the lymph nodes and bone marrow, are somewhat more sensitive to the drug than are the normal more slowly proliferative tissues. The resemblance between the action of mechlorethamine and roentgen irradiation on tissues is said to be so extraordinary that the drug is now used as a complement and supplement to radiation therapy, especially when the neoplastic disease is too diffuse for safe radiotherapy or when radiation resistance occurs. It is used in the treatment of Hodgkin's disease, lymphosarcoma and chronic myelogenous leukemia. It is not generally recommended for the treatment of chronic lymphatic leukemia. Palliative effects have been obtained in polycythemia vera, mycosis fungoides, multiple myeloma, and inoperable carcinoma of the lung. All of the above diseases eventually develop resistance to nitrogen mustards.

The drug is commercially available in the form of a sterile trituration containing 10 mg. of mechlorethamine hydrochloride in 90 mg. of sodium chloride. The use of any other suitable diluent is permitted. The N. F. cautions, "*Extreme care should be observed in handling Sterile Mechlorethamine Hydrochloride [or Trituration], as it is highly toxic and the powder or its solution is a vesicant and a strong nasal irritant.*" Should the material touch the skin or mucosa, it should be immediately washed with copious amounts of clean water followed by application of a 2% aqueous solution of sodium thiosulfate.

Category, Cytotoxic. *Usual dose,* to be determined by the physician according to the needs of the patient.

Commercial source, Mustargen Hydrochloride (Sharp & Dohme).

MEPHENESIN; —CAPSULES; —TABLETS.—Mephenesin is a synthetic compound which produces skeletal muscle relaxation without causing loss of consciousness. Its effect superficially resembles that caused by curare; however, the effect results from selective depression of the basal ganglia, brain stem and thalamus, not from myoneural transmission as with curare.

The drug has been used to provide muscular relaxation and relief from certain types of tremor, especially those of parkinsonism and acute alcoholism. It has also been used in cases where muscular spasm is present, such as in cerebral palsy, bursitis, spondylitis and disc syndromes. Although it has been used as an adjunct in general anesthesia to produce muscular relaxation, it is inferior to curariform agents.

Category, Skeletal muscle relaxant. *Usual dose, oral,* 1 to 3 Gm., 3 to 5 times a day; *intravenous,* 30 to 150 ml. of a 2 per cent solution at a rate of 6 or 7 ml. per minute.

Commercial source, Daserol (Evron); Dioloxol (Carnrick); Glyotol (U. S. Standard); Kinavosyl (Schenley); Lissephen (Abbott); Mepherol (Bryant); Mephson (Tutag); Myoten (Central); Oranixon (Organon); Prolax (Cole Chem. Co.); Sinan (Warren-Teed); Spasmolyn (Heun); Talhart (Hart); Thoxidil (Normand); Tolansin (Physicians Drug); Tolax (Suliff & Case); Tolosate (Brewer); Tolserol (Squibb); Tolulexin (Miller); Tolyspaz (Chicago Pharm.); Walco-Nesin (Walker).

MEPHOBARBITAL; —TABLETS.—Mephobarbital is structurally very similar to phenobarbital. It produces the characteristic barbiturate sedative effect, but produces only a mild hypnotic action. It is reported to be approximately 3 times as effective as phenobarbital in the treatment of epilepsy; and is used as an anticonvulsant for the treatment of grand mal and petit mal seizures, although there is some difference of opinion regarding its efficacy in these conditions. Mephobarbital is also used as a sedative for the treatment of agitated, depressed and anxiety states when minimal hypnotic action is desired.

Category, Central depressant. *Usual dose,* 30 mg.

Commercial source, Mebaral (Winthrop).

METHAPHENILENE HYDROCHLORIDE; —TABLETS.—Methaphenilene Hydrochloride is an ethylenediamine derivative containing the thenyl and phenyl radicals. Structurally, it is closely related to methapyrilene hydrochloride, both drugs representing a modification of tripelennamine. Its antihistaminic effect occurs in 30 to 60 minutes after administration, and lasts for several hours. It falls into an "intermediate" group with respect to side effects, with gastrointestinal irritation being reported most frequently.

Category, Antihistaminic. *Usual dose,* 50 mg.

Commercial source, Diatrine Hydrochloride (Warner-Chilcott).

METHIONINE; —CAPSULES; —TABLETS.—Methionine is an essential amino acid which furnishes methyl groups in biosynthetic reactions. It is involved in the biosynthesis of choline. A synthetically prepared racemic form is available that may be administered in sufficient quantity to provide amounts equivalent to the biologically active *levo* form. It shares the lipotropic actions and uses of choline, and is considered useful as an adjunct in the treatment of fatty liver disease. In patients with severe liver damage, large doses may exaggerate the toxemia of the disease.

Category, Lipotropic. *Usual dose,* 3 Gm.

Commercial source, Meonine (Wyeth); Metione (Lobrica-Debruille); Oradash (Adams); Pedameth (Durst). It is also available from numerous manufacturers under its official title.

MONOETHANOLAMINE.—Monoethanolamine is a clear, colorless, moderately viscous liquid having a

distinctly ammoniacal odor. It is miscible in all proportions with water, acetone, alcohol, glycerin and chloroform. It is immiscible with ether, petroleum benzin, and fixed oils. It dissolves many essential oils. The drug is recognized as a pharmaceutical necessity for thimerosal solution and thimerosal tincture. The reports as to its exact purpose in these products vary considerably.

It is considered to be a surfactant and, as such, reduces the surface tension of both products. Since aqueous solutions must be maintained at a *p*H between 8 and 10.5 to prevent precipitation, monoethanolamine has been said to be an alkalinizing component of the solution and of the tincture. Another claim for its presence is that it prevents the development of irritating properties in the solution on standing. It is believed to exert a stabilizing effect resulting from its chelating action on traces of metallic impurities which may be present in the preparation. A number of metals, notably copper, cause decomposition of the thimerosal, which explains the need for the caution in both monographs. Certain grades of stainless steel and silver, however, are apparently compatible with thimerosal.

Category, Pharmaceutical necessity; ingredient of Thimerosal Solution, and Thimerosal Tincture.

Commercial source, Bulk solution (Carbide & Carbon Chemicals Corp.).

NAEPAINE HYDROCHLORIDE.—This local anesthetic should be restricted in use to corneal anesthesia. It does not produce mydriasis or alteration of intraocular tension. There is little, if any, local irritation following application to the eye.

Category, Local anesthetic.

Commercial source, Amylsine Hydrochloride (Novocol).

NITROFURAZONE; —OINTMENT; —SOLUTION.—Nitrofurazone is a lemon-yellow crystalline powder which darkens slowly on exposure to light, and turns brownish black on heating at high temperatures.

It is a local antibacterial agent which is bacteriostatic or bactericidal depending upon its concentration, and apparently is active due to interference with essential enzyme systems in bacterial cells. It is effective *in vitro* and *in vivo* against a variety of Gram-negative and Gram-positive bacteria; it has little bactericidal effect on *Diplococcus pneumoniae*, and little bacteriostatic action on *Pseudomonas aeruginosa*.

It is useful for topical application in the prophylaxis and treatment of superficial mixed infections common to contaminated wounds, burns, ulcerations and pyodermas, especially impetigo and ecthyma. It is also used for infections of the eye, ear and nose. Organisms resistant to sulfonamides and antibiotics do not appear to be resistant to Nitrofurazone. There are reports that about 5% of patients become sensitized to the drug, sometimes within a few days after the initial application.

Nitrofurazone Ointment contains 0.2% nitrofurazone dissolved in an inert, water-soluble base consisting of polyethylene glycols 300, 1540 and 4000. The Solution contains 0.2% nitrofurazone dissolved in a mixture of polyethylene glycols 300 and 1540 and water. Octylphenoxy polyethoxyethanol, a surfactant, is used as a wetting agent in the product.

Category, Local antibacterial.

Commercial source, Furacin, Furacin Soluble Dressing, Furacin Solution (Eaton).

OCTYLPHENOXY POLYETHOXYETHANOL.—Octylphenoxy Polyethoxyethanol, a mono-ether of a polyethylene glycol, occurs as a clear, pale yellow, viscous liquid, having a faint odor and a bitter taste. It is official as a 33% solution, which is recognized for use as a surfactant (wetting agent) in the preparation of nitrofurazone solution.

Category, Pharmaceutical necessity; ingredient of Nitrofurazone Solution.

Commercial source, Igepal CA 630 (Antara Chemicals).

OLEOVITAMIN A AND D CAPSULES.—Oleovitamin A and D was formerly official in the U.S.P. XIV. The Capsules represent recognition of a new dosage form. Oleovitamin A and D is a solution of vitamin A and vitamin D in fish liver oil or in an edible vegetable oil. The vitamin A is either marine liver oil, or a concentrate or a solution in marine liver oil or in edible vegetable oil of vitamin A alcohol or the edible fatty acid esters (including the acetate) of vitamin A alcohol derived from natural or synthetic sources. One U.S.P. Unit of vitamin A activity is the specific biologic activity of 0.3 microgram of vitamin A alcohol. The vitamin D is a solution of calciferol or activated 7-dehydrocholesterol in an edible vegetable oil, or a solution in an edible vegetable oil of the products produced by the activation of either ergosterol or 7-dehydrocholesterol. Synthetic oleovitamin D contains, in each Gm., not less than 250 mcg. (10,000 U.S.P. Units) of vitamin D. One U.S.P. Unit of vitamin D activity is the specific biologic activity of 0.25 mcg. of vitamin D_3.

Vitamin A is specifically used to prevent or treat the symptoms of a vitamin A deficiency including the eye disease known as xerophthalmia, nyctalopia (night blindness), and certain types of hyperkeratosis of the skin.

Vitamin D is a specific in the prevention and cure of infantile rickets, infantile tetany, osteomalacia, and diseases that are manifestations of abnormal calcium and phosphorus metabolism.

Category, Vitamin A and D. *Usual dose*, to be determined by the physician according to the needs of the patient.

Commercial source, A-D Percomorph (Abbott); Alpha-Deltalin (Lilly); Apolarthron (Roerig); A-Vita-D (Pitman-Moore); Burbot Liver Oil (Rowell); Caritol with Vit. D (Wyeth); Cod Liver Oil Conc. (White); Drisdol with Vitamin A (Winthrop); Hepicoleum (Lilly); Hi-Vi-Tol (Patch); Natola (Parke, Davis); Navitol with Viosterol (Squibb); Oleum Percomorphum with Viosterol (Mead Johnson); Super D (Upjohn); Vad (Cole); Vi-Delta (Lederle).

PARA-AMINOHIPPURIC ACID.—Para-aminohippuric Acid (PAHA) is recognized by the N.F. for use in preparing sodium para-aminohippurate injection which is employed as a diagnostic agent to measure kidney function.

Category, Diagnostic agent (kidney function).

PARA-NITROSULFATHIAZOLE; —SUSPENSION.—This is an antibacterial agent which is instilled rectally for the local treatment of ulcerative

colitis and proctitis. It differs from sulfathiazole only in having a nitro group in place of the amino group of sulfathiazole. It is poorly absorbed from the gastrointestinal tract and produces almost no toxic reactions. It is administered in the form of a 10% suspension. Ten ml. are instilled rectally, undiluted or diluted with an equal volume or more of water, after each evacuation of feces and at bedtime. As the condition improves, the dosage schedule is appropriately altered.

Category, Antibacterial. *Usual dose, rectally,* 10 ml. of a 10 per cent suspension.

Commercial source, Nisulfazole (Breon).

PHENIRAMINE MALEATE; —OPHTHALMIC SOLUTION; —TABLETS.—Pheniramine Maleate, an antihistaminic agent, is a derivative of propylamine. It is useful for the treatment of many allergic conditions and has a low incidence of side effects. It is recognized in tablet form and as an ophthalmic solution.

Category, Antihistaminic. *Usual dose,* 40 mg.

Commercial source, Trimeton Maleate (Schering).

PHENYLETHYL ALCOHOL.—Phenylethyl Alcohol is a colorless liquid with a rose-like odor and a sharp, burning taste. It occurs naturally as a constituent of the volatile oil obtained from several sources, including rose, geranium and neroli. It is usually prepared synthetically.

Phenylethyl Alcohol is officially recognized for its possible use as an antibacterial agent in ophthalmic solutions. At a concentration of 0.5%, it has been demonstrated to inhibit growth of Gram-positive and Gram-negative organisms, and has shown no evidence of incompatibility with medicinal agents commonly used in ophthalmic solutions. Because of its odor, it has been used in formulations of perfumes and flavors, and as a perfume fixative.

Category, Antibacterial; preservative.

Commercial source, Bulk chemical (Dodge & Olcott, Dow Chemical Co., Givaudan-Delawanna, S. B. Penick, van Ameringen-Haebler).

PHTHALYLSULFACETAMIDE; —TABLETS.—Phthalylsulfacetamide is a sulfonamide which is useful as an intestinal anti-infective. Although absorbable into the intestinal wall, it is not absorbed into the blood stream. It produces cessation of diarrhea and relief of abdominal pain and distention in enteric infections and is used in preoperative sterilization of the intestinal tract.

Category, Intestinal anti-infective. *Usual dose,* 2 Gm.

Commercial source, Thalamyd (Schering).

POLYETHYLENE GLYCOL 300.—Polyethylene Glycol 300 is a linear polymer of ethylene oxide and water having a molecular weight within the range of 285 to 315. It occurs as a clear, practically colorless viscous liquid. It is an inert, water-washable compound which is used in nitrofurazone ointment to reduce the hardness of the base caused by the solid polyethylene glycols. It is also used to maintain the consistency of nitrofurazone solution. In addition to its official uses, Polyethylene Glycol 300 because of its wide range of solubility, compatibility and blandness, is used in a great variety of pharmaceuticals and cosmetics such as ointments, hair dressings, hand lotions, sun-tan creams, leg lotions, shaving creams and skin creams.

Category, Pharmaceutical necessity; ingredient of Nitrofurazone Ointment and Nitrofurazone Solution.

Commercial source, Carbowax 300 (Carbide & Carbon).

POLYETHYLENE GLYCOL 1540.—Polyethylene Glycol 1540 is a linear polymer of ethylene oxide and water having a molecular weight within the range of 1300 to 1600. It is a white, waxy, plastic material, having a consistency similar to beeswax. (Polyethylene glycols having an average molecular weight of 200 to 700 are liquids, while those with molecular weights higher than 1000 are wax-like solids.) It is present in nitrofurazone ointment and solution to help provide the proper consistency. As with polyethylene glycol 300, it is used in a wide range of pharmaceutical and cosmetic formulations. Combined with polyethylene glycols of still higher molecular weight, it has been used to prepare an excellent water-soluble suppository base.

Category, Pharmaceutical necessity; ingredient of Nitrofurazone Ointment and Nitrofurazone Solution.

Commercial source, Carbowax 1540 (Carbide & Carbon).

POTASSIUM PHOSPHATE.—Potassium Phosphate (Dibasic Potassium Phosphate) is a mild saline cathartic similar in action to sodium phosphate. Because its irritant action on mucous membranes is very slight, it is decidedly less active than sulfates and is not suitable for cases where a strong purgative action is desired. On an empty stomach it will cause emptying of the gall bladder when it reaches the duodenum.

Category, Cathartic. *Usual dose,* 4 Gm.

Commercial source (Baker, Mallinckrodt, Merck, Monsanto).

PROBARBITAL SODIUM; —TABLETS.—Probarbital Sodium is a synthetic, water-soluble barbiturate which is promptly absorbed and rapidly excreted. Some soporific action frequently persists for 24 hours. It is used as a hypnotic to combat restlessness, irritability and sleeplessness, producing relatively normal sleep. Tolerance does not develop readily. The drug is contraindicated in patients with pulmonary disease, pulmonary edema, uncontrolled diabetes, severe trauma, or in the presence of shock.

Category, Central depressant. *Usual dose,* 250 mg.

Commercial source, Ipral Sodium (Squibb).

PROMETHAZINE HYDROCHLORIDE; —TABLETS.—This is an antihistaminic agent which may be classified as an ethylenediamine derivative in which an amine group of the ethylenediamine moiety has been elaborated to phenothiazine, and a hydrogen atom attached to the carbon adjoining the other amine group has been replaced by a methyl group.

It possesses the actions of the other antihistaminics but has a somewhat more prolonged effect. It has been observed that the maximum protective effect appears about 3 hours after ingestion, and that inhibitory action persists for as long as 34 hours. Drowsiness, the most frequent side-effect, occurs in 20 to 25% of patients. Dizziness, weakness, nausea and vomiting are very infrequent. The drug is often included as a component of antitussive preparations.

Category, Antihistaminic. *Usual dose,* 12 mg.

Commercial source, Phenergan Hydrochloride (Wyeth).

PROTAMINE SULFATE INJECTION.—This is a sterile solution in isotonic sodium chloride injection. It may be prepared from protamine sulfate obtained from the sperm or from the mature testes of fish belonging to the genera *Oncorhynchus* Suckley, *Salmo* Linné, or *Trutta* Jordan et Evermann (Fam. *Salmonidae*). The protamine sulfate conforms to the regulations of the Federal Food and Drug Administration concerning certification of batches of drugs composed wholly or partly of insulin. It may contain 0.25% of phenol as a bacteriostatic agent.

A protamine is any one of a group of simple proteins with basic properties occurring in the sex cells of fishes. *Salmine,* obtained from salmon, constitutes the usual protamine component of protamine zinc insulin injection; the sulfate of this protamine may be used to prepare Protamine Sulfate Injection.

It is administered by slow intravenous injection after suitable dilution with isotonic sodium chloride injection to counteract the effect of heparin overdosage. Although protamine itself acts as an anticoagulant in the presence of heparin, the attraction of the two substances for one another is much greater than their individual attraction to the blood elements, and therefore they tend to neutralize each other's anticoagulant activity. Not more than 50 mg. of protamine sulfate should be given at any one time. It is also used in the treatment of certain hemorrhagic conditions due to an abnormally high concentration of heparin in the plasma.

Category, Heparin antagonist. *Usual dose of Protamine Sulfate,* to be determined by the physician in accordance with the needs of the patient.

Commercial source, Protamine Sulfate Injection (Lilly, Upjohn).

QUINIDINE GLUCONATE; —INJECTION.—Quinidine Gluconate is the gluconate of an alkaloid which may be obtained from various species of *Cinchona* and other sources or may be prepared from quinine. The Injection is a sterile solution in water for injection and may contain 0.25% of phenol as a bacteriostatic agent. Quinidine Gluconate is a cardiac depressant possessing the same actions and uses as quinidine sulfate. It has the advantage over quinidine sulfate of affording a more stable and less irritating solution for intramuscular or intravenous use. Although intravenous administration is rare, it may be a life-saving measure in ventricular tachycardia with acute pulmonary edema or severe congestive failure.

Category, Cardiac depressant. *Usual dose,* to be determined by the physician according to the needs of the patient.

Commercial source, Quinidine Gluconate Solution (Lilly).

SODIUM PARA-AMINOHIPPURATE INJECTION.—Sodium Para-aminohippurate Injection is a sterile solution in water for injection and is a diagnostic agent used to determine kidney function. It may be used both to measure effective renal plasma flow and to determine the functional capacity of the tubular excretory mechanism since it is filtered by the glomeruli and excreted by the tubular epithelium of the kidneys.

To determine effective renal plasma flow, a known quantity (sufficient to produce 2 mg./100 ml. of blood plasma) of para-aminohippurate is administered intravenously to the patient. At this concentration, 88% of the compound is removed from the normal kidney in a single circulation. The average amount of para-aminohippurate eliminated in the urine, in mg. per minute, is determined, and this is divided by the content of para-aminohippurate per ml. of plasma; the quotient is the effective renal plasma flow, and is expressed in ml. per minute. Patients receiving sulfonamides should not be given this test, as the sulfonamides will cause erroneously high results.

To determine the amount excreted by the tubules in mg. per minute (the so-called tubular excretory mass), a quantity of sodium para-aminohippurate (sufficient to give a plasma concentration of about 60 mg./100 ml.) is administered intravenously. The amount eliminated in the urine is determined in mg. per minute and includes both glomerular filtration and tubular excretion. Glomerular filtration rate is determined (see Mannitol Injection) in ml. per minute. From this figure, and the known plasma concentration, the amount that was filtered through the glomeruli in one minute is determined in mg. per minute. Then, the total number of mg. excreted in the urine per minute minus the amount filtered through the glomeruli per minute equals the amount of para-aminohippurate in mg. per minute excreted by the tubules (tubular excretory mass).

Category, Diagnostic aid (kidney function). *Usual dose of Sodium Para-aminohippurate,* to be determined by the physician according to the needs of the patient.

Commercial source, Sodium Para-Aminohippurate Solution (Sharp & Dohme).

SODIUM PSYLLIATE INJECTION.—Sodium Psylliate Injection is a sterile solution of the sodium salts of the liquid fatty acids obtained by the hydrolysis of the fixed oil of the seeds of *Plantago ovata* Forskal. Benzyl alcohol, not to exceed 3%, may be added as a preservative. Sodium Psylliate is used in the form of a 5% solution as a sclerosing agent for the obliteration of varicose veins of the lower extremities and of selected internal hemorrhoids that are not prolapsed or thrombosed. It is not recommended for other types of hemorrhoids. Its sclerosing action is approximately equivalent to that of the other fatty acid salts used for the obliteration of varicose veins; on repeated use it causes approximately the same frequency of allergic reactions.

Category, Sclerosing agent. *Usual dose of Sodium Psylliate,* to be determined by the physician according to the needs of the patient.

Commercial source, Sylnasol (Searle).

SORBITOL SOLUTION.—Sorbitol Solution is a water solution containing 70% of total solids consisting essentially of D-sorbitol, a hexahydric alcohol, and a small amount of mannitol and other isomeric polyhydric alcohols. The solution contains not less than 64% of D-sorbitol.

Although sorbitol solution is recognized simply as a pharmaceutical necessity, it has extensive applications. It makes an excellent replacement for glycerin when mixed with an equal volume of propylene glycol. It is used in the formulation of many pharmaceutical and cosmetic products; its use as a plasticizer in gelatin capsules is said to produce a

product which has less tendency to dry out or otherwise deteriorate. It has been used in the synthesis of ascorbic acid. Sorbitol is utilized by the body as a foodstuff. If a 50% solution of pure sorbitol is injected intravenously, it will produce diuresis and effect a dehydrating action.

Category, Pharmaceutical necessity.

Commercial source, Sorbitol Solution (Atlas Powder Co.).

SULFACETAMIDE, SULFADIAZINE, AND SULFAMERAZINE SUSPENSION; —TABLETS.—Sulfacetamide, Sulfadiazine and Sulfamerazine Suspension (and Tablets) consist of the three sulfonamides usually in equal amounts. The Suspension is buffered and may contain suitable flavoring agents, suspending agents, preservatives, and certified coal-tar colors.

The mixture has essentially the same actions and uses as the individual sulfonamides. The mixtures were developed on the premise that efficacy is retained while the tendency for crystal formation in the renal tubules is decreased. Potential renal damage is diminished inasmuch as the concentration of each sulfonamide is less than if it were used alone, and renal excretion of each sulfonamide proceeds independently of the others present. The therapeutic efficacy of the mixtures, however, is that of the sum of the components. This particular combination is used where a systemic effect is desired.

Category, Antibacterial. *Usual dose of combinations of sulfacetamide, sulfadiazine and sulfamerazine,* 2 Gm.

Commercial source, Buffonamide Susp. (Tutag); Cetazine Tabs. (Bowman); Dorsulfas Susp. & Tabs. (Smith-Dorsey); Incorposul Susp. & Tabs. (Blue Line); Pansulfa Susp. & Tabs. (Merrell); Tilamide Susp. (Tilden); Tricombisul Susp. & Tabs. (Schering); Trizyl Susp. & Tabs. (Central).

SULFADIAZINE AND SULFAMERAZINE TABLETS.—Sulfadiazine and Sulfamerazine Tablets usually contain equal amounts of the two components. (See Sulfacetamide, Sulfadiazine and Sulfamerazine for the rationale of sulfonamide combinations.) This combination is used where a systemic effect is desired.

Category, Antibacterial. *Usual dose of combined sulfadiazine and sulfamerazine,* 2 Gm.

Commercial source, Chera Sultabs (Sutliff-Case); Combisul D M (Schering); Diamerzine (Vale); Disulfyn (Rorer); Duozine Tablets (Abbott); Merdisul (Bowman); Sulfonamide Duplex (Lilly).

THEOPHYLLINE SODIUM GLYCINATE; —TABLETS.—Theophylline Sodium Glycinate is an equilibrium mixture containing theophylline sodium and glycine in approximately equimolecular proportions buffered with an additional mole of glycine.

The actions of Theophylline Sodium Glycinate are typical of the soluble derivatives of theophylline, but the drug is more stable in air and is less irritating to the gastric mucosa. Orally, it is tolerated in larger doses than the other theophylline preparations, and can be administered by mouth in liquid form as well as in tablets not enteric coated. It may also be given by intravenous injection. It is incompatible with acidic drugs. It can be administered alone or alternated with penicillin as an aerosol for inhalation in the treatment of severe bronchial asthma.

As with aminophylline, it acts as a diuretic, antispasmodic (particularly of the bronchi), and respiratory stimulant. It is used in the treatment of bronchial asthma, angina pectoris, and in paroxysmal nocturnal dyspnea. Its value in other cardiac conditions is not established.

Category, Smooth muscle relaxant. *Usual dose,* 300 mg.

Commercial source, Cinaphyl (Ascher); Dorsaphyllin (Smith-Dorsey); Glynazan (First Texas); Glylene (Flint, Eaton); Glytheonate (Patch); Pemophyllin (Pitman-Moore); Synophylate (Central); Theoglycinate (Brayten.)

THIMEROSAL SOLUTION; —TINCTURE.—Thimerosal Solution and Thimerosal Tincture are newly recognized by the N.F. as official forms of thimerosal. Thimerosal is bacteriostatic for many nonsporulating bacteria and is also fungistatic. The aqueous solution is used for application to wounds and denuded surfaces, and to mucous membranes (nasal, ophthalmic and urethral). The tincture is employed primarily to disinfect intact skin surfaces.

Both the Solution and the Tincture may be colored with suitable coal-tar colors. In both monographs the N.F. cautions, "*Manufacture and store Thimerosal Solution [Tincture] in glass or suitably resistant metal containers.*" (For an explanation of this caution see *Monoethanolamine.*)

Category, Antibacterial.

Commercial source, Merthiolate Solution, Merthiolate Tincture (Lilly).

***dl*-α-TOCOPHEROL.**—*dl*-Alpha Tocopherol is a form of vitamin E prepared synthetically. It is a yellow, nearly colorless, clear, viscous oil. Each mg. of *dl*-Alpha Tocopherol is equivalent to 1.1 International Units of vitamin E. For a discussion of the use of vitamin E see *Mixed Tocopherols Concentrate.*

Category, Vitamin E. *Usual dose,* to be determined by the physician according to the needs of the patient.

Commercial source, Eprolin S (Lilly); Vascuals (V.C.A.); Bulk chemical (Dist. Prods. Indust., Hoffmann-La Roche, Merck, N.Y. Quinine & Chem. Works).

TOCOPHEROLS, MIXED, CONCENTRATE.—Mixed Tocopherols Concentrate, a source of vitamin E, is obtained by the vacuum distillation of edible vegetable oils or their by-products. It contains not less than 34% of total tocopherols and may be so adjusted by the addition of an edible vegetable oil. Of the total tocopherols present not less than 50% consist of *d*-alpha tocopherol. The content of *d*-alpha tocopherol in the concentrate may be adjusted by physical or chemical means. The concentrate occurs as a brownish red to red, nearly odorless, clear, viscous oil. It may be labeled in terms of mg. of Mixed Tocopherols, provided it is also labeled in terms of mg. of *d*-alpha tocopherol or its equivalent in International Units of vitamin E. The International Standard for vitamin E used as a reference in all bio-assays for this vitamin is a solution of *dl*-alpha tocopheryl acetate in coconut oil. Each 0.1 Gm. of this solution contains 1 mg. of the acetate. Results of an assay are expressed in mg. of the vitamin. Each 1 mg. of *dl*-alpha tocopheryl acetate = 1 International Unit.

Of the four naturally occurring tocopherols presently known, only alpha tocopherol demonstrates substantial biological activity. The metabolic role of vitamin E in man, and its need in human nutrition has not been established. It is so widely distributed in nature, that vitamin E deficiency in man is extremely unlikely. The tocopheryl acetate is much more resistant to oxidation than the free tocopherol. Consequently, it is the free tocopherol that is used as an antioxidant in pharmaceutical preparations, whereas the tocopheryl acetate is to be preferred in vitamin E formulations. Tocopherol is utilized in the stabilization of petrolatum, white petrolatum, liquid petrolatum, light liquid petrolatum and many other unofficial fats and oils.

An extraordinary variety of diseases has been said to be benefited by vitamin E. Its effectiveness in the treatment of sterility, habitual abortion, muscular dystrophy, creatinurea or heart conditions must be further substantiated before any merit can be given to its application in these conditions.

Category, Vitamin E. *Usual dose,* To be determined by the physician according to the needs of the patient.

Commercial source, Eprolin (Lilly); Mixed Tocopherols (Parke Davis); Natopherol (Abbott); Vitamin E Concentrate Capsules (Upjohn); Vitamin E Capsules (Walker).

***d*-α-TOCOPHERYL ACETATE.**—*d*-Alpha Tocopheryl Acetate is a form of vitamin E prepared by crystallizing *d*-alpha tocopheryl acetate concentrate from a suitable solvent. It occurs as a yellow, nearly odorless, clear, viscous oil. It may solidify on standing in the cold, and melts at approximately 25°. Each mg. of *d*-Alpha Tocopheryl Acetate is equivalent to 1.36 International Units of vitamin E. For a discussion of the uses of vitamin E see *Mixed Tocopherols Concentrate.*

Category, Vitamin E. *Usual dose,* to be determined by the physician according to the needs of the patient.

Commercial source, Alpha Tocopherol (Upjohn); Contopheron (Rexall); Econ (Cole); E-Toplex (U. S. Vitamin); Evipherol (Kirk); Natopherol Acetate (Abbott); Vi-Ea (Miller); Vi-E-Caps (Bluline).

***d*-α-TOCOPHERYL ACETATE CONCENTRATE.**—*d*-Alpha Tocopheryl Acetate Concentrate is a source of vitamin E obtained by vacuum distillation and acetylation of edible vegetable oils or of the by-products of vegetable oil refining. It contains not less than 25% of *d*-alpha tocopheryl acetate and may be so adjusted by the addition of an edible vegetable oil. Of the total tocopheryl acetate present not less than 64% consists of *d*-alpha tocopheryl acetate. The content of *d*-alpha tocopheryl acetate in the Concentrate may be adjusted by physical or chemical means.

The Concentrate occurs as a light brownish yellow, nearly odorless, clear, viscous oil. Each mg. of *d*-alpha tocopheryl acetate is equivalent to 1.36 International Units of vitamin E. For a discussion of the use of vitamin E see *Mixed Tocopherols Concentrate.*

Category, Vitamin E. *Usual dose,* to be determined by the physician according to the needs of the patient.

Commercial source, Cotopherol (Endo); Ecofrol (Breon); E-Ferol (Testagar); Mixed Tocopheryl Acetates (Parke Davis); Pletocol (Plessner); Tocopherex (Squibb); Tocopherol (A.P.C.); Tofaxin (Winthrop).

***dl*-α-TOCOPHERYL ACETATE.**—*dl*-Alpha Tocopheryl Acetate is a synthetically prepared form of vitamin E. It occurs as a yellow, nearly odorless, clear, viscous oil. Each mg. of *dl*-Alpha Tocopheryl Acetate is equivalent to 1 International Unit of vitamin E. For a discussion of the uses of vitamin E see *Mixed Tocopherols Concentrate.*

Category, Vitamin E. *Usual dose,* To be determined by the physician according to the needs of the patient.

Commercial source, Ephynal Acetate (Roche); Syntopherol Acetate (Abbott); Tocophrin (Barry); Bulk chemical (Dist. Prods. Indust., Hoffmann-La Roche, Merck, N.Y. Quinine & Chem. Works).

TUAMINOHEPTANE SULFATE.—This compound is a vasoconstrictor and a sympathomimetic amine. A 0.5% solution produces a vasoconstrictor action equivalent to that of a 1% solution of ephedrine. The duration of effect is greater than that of ephedrine. Tuaminoheptane Sulfate is employed only as a topical vasoconstrictor agent. A 1% solution may be applied to mucous membranes of infants and adults by spray, dropper or tampon, and is usually adequate for routine treatment. A 2% solution is also available, and may be used for operative procedures, diagnostic examination and other special uses. For displacement therapy of para-nasal sinuses, a 0.2% solution can be used.

Category, Sympathomimetic.

Commercial source, Tuamine Sulfate (Lilly).

VINBARBITAL; —CAPSULES; —SODIUM INJECTION.—Vinbarbital is a barbiturate with a short period of induction and a moderate duration of action. The acid form is used for preparation of capsules, and the sodium salt is used in the Injection and for the preparation of oral liquids.

In addition to its efficacy as an hypnotic agent for insomnia, Vinbarbital has been used as a depressant for certain psychotic states, for the induction of obstetrical amnesia and anesthesia, and as a preoperative sedative.

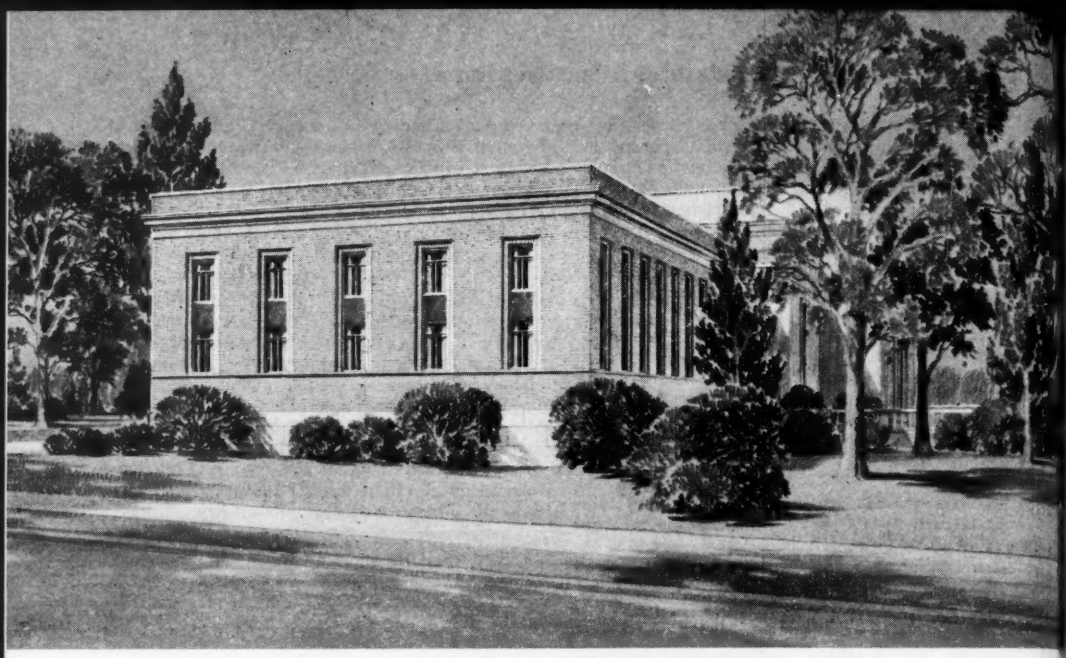
Category, Central depressant. *Usual dose,* 60 mg. (sedative, 30 mg.).

Commercial source, Delvinal (Sharp & Dohme).

ZINC COMPOUNDS AND EUGENOL CEMENT.—Zinc Compounds and Eugenol Cement (Zinc-Eugenol Cement) is prepared in two parts. The powder consists of zinc oxide as the major ingredient with zinc acetate, zinc stearate, and rosin. It is yellowish white to white in color. The liquid consists of eugenol and cottonseed oil. It is thin and colorless to weak yellow, having a strong aromatic odor of clove and a pungent, spicy taste.

By mixing 10 parts of the powder with 1 part of the liquid a thick paste or cement is formed which is used by dentists as a pulp cap or temporary filling for carious teeth. It is said to exert a sterilizing effect and to protect the dentine from further destruction. The powder and liquid should be mixed immediately before use. The N.F. permits variation of the amount of liquid used in the mixture in order to give any desired consistency.

Category, Protective (Dental).



Architect's Conception of Proposed Addition to American Institute of Pharmacy To Provide for A.PH.A. Headquarters Expansion

A.PH.A. Expansion Program

THE MAJOR objective of the AMERICAN PHARMACEUTICAL ASSOCIATION during 1956 will be to complete the drive for funds for an addition to the headquarters building of the A.PH.A. The culmination of this project will enable the leaders of the ASSOCIATION to make a physical reality of a few more of their aspirations for your ASSOCIATION.

The headquarters building at 2215 Constitution Avenue in Washington, D.C., presently houses a comprehensive pharmaceutical library, a research laboratory, the editorial offices of the ASSOCIATION'S publications, and the headquarters staffs and offices. This building, designed by the late John Russell Pope, and dedicated in 1934, has been a source of great pride to all members of the A.PH.A. Known as the American Institute of Pharmacy, the structure has profoundly impressed both governmental and private agencies throughout the world. It provides befitting evidence of the high professional and scientific ideals serving as the basis for the numerous activities conducted by the members of the ASSOCIATION, both nationally and internationally.

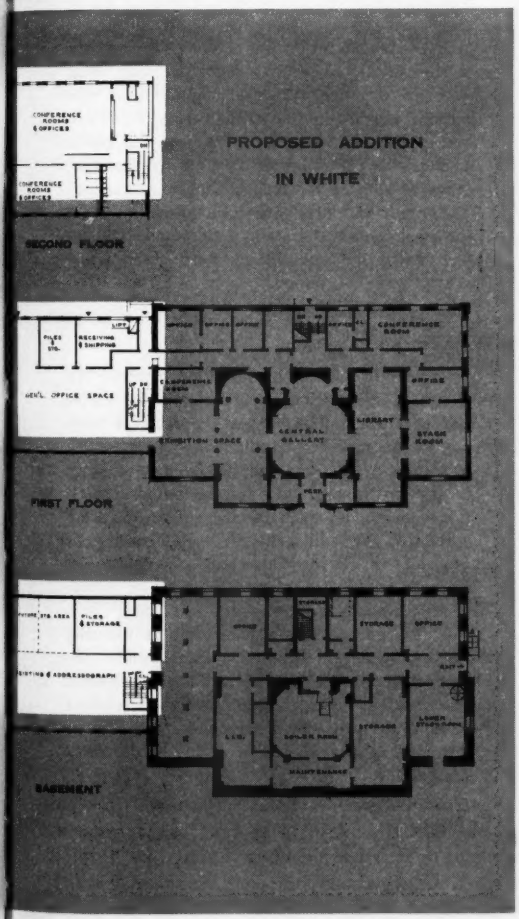
With the aid of leaders in the pharmaceutical industry, officers and members of the state pharmaceutical associations, thousands of practicing pharmacists, and numerous pharmacy students, more than $700,000 was raised with which to purchase the site and erect the present beautiful building on Constitution Avenue. The results of this dream, brought to reality through the efforts of practical men of vision, has resulted in untold benefits to our profession as a whole.

But the ASSOCIATION has expanded so rapidly in recent years that it has outgrown its present facilities. The membership alone has quadrupled since the dynamic Dr. H. A. B. Dunning and his colleagues E. L. Newcomb, E. F. Kelly, S. L. Hilton, the Council, special committees of the A.PH.A., and others active in the ASSOCIATION program first visualized the present headquarters building.

During the last quarter of a century since the American Institute of Pharmacy was constructed, the tremendous growth of American pharmacy has greatly augmented demands for services, which in turn has necessitated additions to staff and the

accumulation of considerable equipment. From a mere handful of personnel and a total membership of less than 6,000 in 1945, the rapid growth of the ASSOCIATION, especially during the last decade has necessitated increasing the staff to some 40 people in the headquarters building in order to service a membership of more than 27,000. Urgent needs have arisen for more publication facilities, more frequent and more complete bulletin service on legal and administrative matters influencing the profession, more guidance in professional and public relations, and more complete representation of the profession's views before governmental, interprofessional, intraprofessional, and private agencies.

The members of the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION have been acutely aware of the predicament arising from congested working conditions and shortages of staff for a number of years. After very careful deliberation and thorough scrutiny of the backgrounds of outstanding personnel, the Council has provided for additions of key personnel to the staff. The most pressing need now remaining, the Council has agreed, is to provide adequate space for its expanded professional, scientific, and administrative activities so as to preserve areas in the present building designed to memorialize the professional and ethical facets of pharmaceutical practice.



The diagram on this page illustrates the proposed structure, consisting of a three-story wing, which will provide about 90,000 cubic feet of additional space at a cost of about $300,000. The plan has been endorsed by the Council. A preliminary design submitted by Eggers and Higgins is shown on the opposite page. It is subject to approval by the Federal Fine Arts Commission which has described the present building in its official reports as an "architectural gem."

It is extremely fortunate that Dr. H. A. B. Dunning, who was largely instrumental in securing the site and funds for the present building, has been acting as head of the current expansion program and has been highly successful in his solicitation of funds for the proposed addition from the drug industry. As a result of his efforts, more than $100,000 has already been contributed from this source.

Dr. Hugo H. Schaefer, Treasurer of the ASSOCIATION, was asked by the Council to serve as chairman of a committee for the solicitation of funds from the general membership of the A.PH.A. His campaign is now under way. Contributions and pledges ranging from $5 to $100 have already been received from more than 80 members. The 16 members of the Council of the A.PH.A. have pledged approximately $5,000 as their personal contributions.

The success of the whole building program now depends on every member contributing a fair share of the expense. Nearly $200,000 is still needed.

Please forward your contributions to the AMERICAN PHARMACEUTICAL ASSOCIATION Building Fund, c/o the Secretary of the ASSOCIATION, 2215 Constitution Avenue, Washington 7, D.C.

The Signposts of Progress . . . Can Be Found . . . at Our

Professional CROSSROADS

*by Austin Smith, M.D.**

A CROSSROAD can be, I suppose, a place of confusion where uncertainty exists concerning a path to follow, or it may be, on the other hand, a landmark for a road to new horizons. Sometimes all of us feel as if we were at crossroads with no knowledge of where next to go. On other occasions, however, we think differently and can scarcely wait to "face up" to new challenges. Probably these ups and downs are common to people throughout the world, but in a country such as ours they seem to loom large at times, perhaps because of the complexities of our lives, the diversity of our challenges, the freedom with which we move and the scope of our professional responsibilities. Anyway, we move at such a pace that any swing of a pendulum may be exaggerated.

Principles of Medical Ethics

While thinking of the scope of our professional responsibilities I recalled a section of medical ethics now under consideration by the American Medical Association. It reads in part:

"The avowed objective of the profession of medicine is the common good of mankind. Physicians faithful to the ancient tenets of this profession are ever cognizant of the fact that they are trustees of medical knowledge and skill and that they must dispense the benefits of their special attainments in medicine to all who need them. Physicians dedicate their lives to the alleviation of suffering, to the enhancement and prolongation of life, and to the destinies of humanity. They share whatever they have learned and whatever they may discover with their colleagues in every part of the globe. They recognize instinctively that the need for improvement of medical knowledge and skills is never at an end, and while they strive toward satisfaction of this need they are zealous in making available to physicians of good character who possess the desire and the ability to learn the aggregate of progress in medical education, research, and discoveries as they may exist at the time. They do not remain content to limit their activities to the care of the infirm, since they recognize also their useful rank among the vast concourse of citizens on whose shoulders the destiny of our nation rests. At the same time they will resist attempts to debase their services by diverting them to ignoble purposes. In their relationships with patients, with colleagues, and with the public, they maintain under God, as they have down the ages, the most inflexible standards of personal honor."

Part of the preamble to the proposed principles of medical ethics reads:

"These principles are intended to serve the physician as a guide to ethical conduct as he strives to accomplish his prime purpose of serving the common good and improving the health of mankind. . . . They are not immutable laws to govern the physician, for the ethical practitioner needs no such laws; rather they are standards by which he may determine the propriety of his own conduct. Undoubtedly, interpretation of these principles by an appropriate authority will be required at times. As a rule, however, the physician who is capable, honest, decent, courteous, vigilant, and an observer of the Golden Rule, and who conducts his affairs in the light of his own conscientious interpretation of these principles, will find no difficulty in the discharge of his professional obligations."

You may wonder why I refer to the principles of Medical ethics. Why not, one might ask, refer to Pharmacy's ethics? Well, I do it simply to draw attention to the fact that *sound principles are applicable in thought to almost any group, pro-*

* An after-dinner address presented at the First Annual Philadelphia Pharmacy Forum, March 14, 1956. Dr. Smith is editor of the *Journal of the American Medical Association.*

fessional or industrial. How many words of what I have quoted could be applied to pharmacy, dentistry, nursing or any group that provides a service! In fact, I think they would not need significant change to be applicable to those who provide products since they only express a way of living.

Subjects of Interest to Pharmacy and Medicine

It is impossible today to read a professional journal, a trade journal, or a newspaper without finding much of mutual interest to your profession and mine. We read about interprofessional meetings, community projects, new drugs, expansion of hospital facilities, health education—well, you name it, and I am sure nine times out of ten the subject will appeal also to others. In fact, while reading just two successive issues of *Drug Topics* and *American Druggist* I noticed 33 items of mutual interest to all of us. Let me just quickly mention them: Health programs, pharmacy relations, legislation, sale of drugs, hospitals, drug distribution, advertising, health insurance, illicit drug use, I.S.S.A., scholarships, prescription items, drug store ownerships, defense, F.D.A. anniversary, sanitation, diseases, narcotics, drug prices, catastrophies as floods, research, newspaper stories, food, cosmetics, armed forces, drug substitution, prescription departments, devices, rural medicine, animal illness, baby needs, geriatrics, government agencies.

This is from two journals devoted to pharmacy. Imagine the length of the list if I also included two medical and two industrial journals. It's part of our way of living and reflects the frank, open and usually friendly way we have of doing things and talking about them in our country. And nobody knows what a blessing this is until he has observed first-hand the absence of this outlook in other countries where, for example, pharmacists and physicians never meet interprofessionally, where members of the drug industry and of the health professions meet only socially and never to jointly consider health matters of mutual interest; where the use of drugs is limited to those on an approved list; where there is no unlimited choice of brands. And so on.

Professional Surveys

The freedom we have here has led to some interesting problems, or perhaps I should say questions, the biggest one being, I suppose "Where do we go from here?" In this respect may I be permitted to refer again to medicine to help me emphasize the mutual interests shared by members of the health field. During the past year or two we've read much about the public's opinion of drugs, drug manufacturers, prescriptions, and other topics of lively conversation. I certainly do not need to go into the details before this audience of the survey reported by the Health Information Foundation. I can, however, pause long enough to point out that the survey by this Foundation raises some interesting questions.

H.I.F. Survey.—Among the criticisms received by the Foundation interrogators are:

Drugs cost too much.
Doctors over-prescribe.
The drug industry is making too much money.
Drug and prescription prices are not uniform.
Doctors, pharmacists and drug manufacturers cooperate to keep drug prices high.
Drug manufacturers are legally free to exploit the public.
Drug manufacturers exploit unproved ideas and products.
New drugs are over-sold.
Diagnosis suffers as broadly acting drugs are found.
Both the drug industry and doctors experiment with the public.
Doctors get a kickback from prescriptions.

Other criticisms were offered but they need not be mentioned as the only point I wish to make is this: *These criticisms practically without exception arise from misunderstanding—plus a resentment toward being ill—and could be reduced to a minimum if all interested parties would assume their share of the responsibility in trying to dispel the rumors.* All center around one thing—the story of modern medicine which in itself is a story that can be shouted with pride from the rooftops. No one need be ashamed of it or his part in it, but he cannot be exactly prideful if he stands idly by while it is ripped to pieces by malicious gossip, half-truth or slander. This is one of the professional crossroads for all of us.

A.M.A. Survey.—Let me also report a few of the findings of a recent survey by the American Medical Association:

Most Americans have their own family doctors.
Most of them like him and like doctors as a group.
People's opinions gained from their own experience differ from those based on hearsay or other sources.
Doctors are more critical of themselves than are other people.
When people criticize physicians, it is largely for the cost of care; they do not, however, think doctors are trying to "get rich quick".

They are evenly split for and against "sliding scales" of fees.

Ninety-six per cent of the people who have a family doctor say they like him personally. Between 88 and 98 per cent have high opinions of his intelligence, capability, dedication to humanity, and personal interests in patients. Their most unfavorable comments are that he thinks he is always right and is hard to reach for emergency calls.

Americans have a good opinion of doctors generally, *e.g.*, 93 per cent of all those surveyed say doctors as a group are "likeable." But people are more inclined to think in impersonal terms and to use different standards in judging doctors other than their own. The proportion of favorable attitudes is lower, and denial of faults less emphatic, when they speak of doctors they do not know personally. About doctors in general they are critical mostly of fees, coldness, impatience, lack of frankness, unavailability, and incompetence.

Most people tend to think of their doctor as "someone special" and feel that today—even more than 20 years ago—it is important to choose the right man.

About eight of ten people think their doctor is "different." For their reasons, 32 per cent cite personal interest, sympathy, and kindness; 19 per cent competence, intelligence, and education; 17 per cent friendliness, personality and manner; and nine per cent frankness and honesty. Small numbers mention availability, patience, understanding, acceptance of payment delays, and lower fees.

If you're wondering why I have referred to a survey of physicians I can assure you it's for a very simple reason. It is this: It's about time for all of us to look at ourselves as other see us. This, then, is another sign of one professional crossroads. We are all beginning to learn more about where we have been so we may know better where we are to go and how to get there.

Guide Posts

What might we consider are some of the signs we might see posted at crossroads for our professions? There are many possibilities so let's name only a few: Interprofessional relations, health education, community leadership, application of research findings, legal restrictions over professional practices, educational standards, harmful health practices, the problems of an aging population. I could add to this list but the examples are sufficient to show how varied are our interests today and how much of a common appeal they have for pharmacy and medicine in our roles as professional people and as citizens.

Good Citizenship.—One time I read in *Rotary International* this short piece entitled "Ten Marks of a Good Citizen":

He is well informed on local and world affairs.
He is courteous, unselfish, friendly—gets along well with others—is a good neighbor.
He is sincere, dependable, and takes an active part in the church or religious community of his choice.
He appreciates what others have done for him and accepts responsibility for the future betterment of his community.
He is fair and just in his relations with others.
He obeys the laws of his community and nation.
He votes regularly and intelligently at election time.
He is interested in the freedom and welfare of all of the world's peoples and does his part to secure them.
He is productive—renders a worth-while service to his fellow man.
He sets a good example to the youth of his community.

I am sure all of us could make our own list for the evaluation of a good citizen. I know, for example, if I developed such a list I would include reference to the utilization of special training *e.g.* medicine, pharmacy, nursing, dentistry, for the advancement of mankind. But regardless of our own list none of us would omit reference such as Rotary's to a good citizen being a good neighbor, taking an active part in community affairs, being productive, being fair and just and setting a good example. These are fundamental guide posts for business life, professional life or community life in general.

Beneficial Interprofessional Meetings.—As you know, many meetings have been held between pharmacy, medicine, industry and other groups to explore ways of resolving mutual problems and to advance the services they are morally obligated to provide. Often, however, few others even learn of these meetings or of their significance. Maybe because we just don't bother talking about them. An example is a recent meeting between representatives of the AMERICAN PHARMACEUTICAL ASSOCIATION, the National Association of Retail Druggists and the American Medical Association. How many of you or your associates know about this meeting on interprofessional problems? And yet, Dr. Robert Fischelis issued a statement reading in part:

"Relations between organized medicine and pharmacy at the national level are more friendly

cooperative and mutually beneficial than ever before as a result of the meeting of representatives of the two professions in Chicago on January 5.

"Problems arising recently in the relationship between individuals and groups within the two professions at state and local levels were discussed with complete candor by the six representatives of American pharmacy who met with the three physicians designated by the Board of Trustees of the American Medical Association to act as their representatives.

"The fact that this interprofessional group agreed that discussion of ethical concepts and basic principles as they affect the public relations of both professions was essential from time to time augurs well for the establishment of ways and means for avoiding encroachment upon the professional prerogatives of either group. . . .

"In the discussion of the joint committee on January 5 it was pointed out that interpretation of the principles of ethics of each profession is an important factor in the relationship between them, and state and local organizations of physicians and pharmacists must understand the principles laid down and avoid over-exaggeration of the effects of any changes which are proposed from time to time in order to meet special contingencies. There are legal as well as professional problems involved in governing the activities of individual members of any profession and there must be mutual understanding in order to avoid unnecessary controversies. It is only by cultivation of mutual respect and appreciation of difficulties which confront both professions in their endeavors to work out their individual problems that progress can be made. The decision of the joint committee to ask the governing bodies of the three national associations represented to authorize further meetings on an annual or semi-annual basis is indicative of the feeling that such meetings are of the greatest value. . . .

"The committee will make available to state and local organizations from time to time, such information as will be helpful in furthering good interprofessional relations at all levels. It is to be hoped that state and local organizations will cooperate with the national committee to avoid any action which may have a tendency to aggravate rather than reduce tension between the professions."

Public Relations

How many also are familiar with the information on the time given by doctors without charge to the sick who do not or cannot pay for medical service? How many know of the survey recently reported from the east coast of the United States on the financial affairs of doctors at the time of their deaths? How many know of the tremendous sums of money paid out by the drug industry for research, basic as well as applied? How many know of the study by Professor Seymour B. Jeffries of Brooklyn College of Pharmacy who reports pharmacy is subsidizing the public's medication bill on more than 55 per cent of their prescriptions to the tune of $47,000,000.00 annually?

Don't you think it's time we looked for signposts at the crossroads? In doing so, I think we should know our standing individually and collectively before our professions and before the public. I think we must recognize what our roles truly are and should be in our own profession, in the other health professions, and in the community. I think we should recognize what we are supposed to do for ourselves, for each other, for other professions, and for the public. We must help ourselves and help others whether it be a question of good will, education or even bringing medical services to a community. Between new drugs, new treatments and publicity there is an ever increasing need for alertness to modern life and its demanding ways. To recognize this change of pace let me quote from some headlines prepared for pharmacists by *American Druggist:*

1,874,027 people did not die (This represents the saving of lives in 15 years because of lowered death rate and longer life span.)

66,500 orphans . . . not 750,000 (Thirty years ago there were 750,000 orphans in the United States. Now there are 66,500 in spite of 50 per cent increase in population.)

7,000 deaths then . . . 310 now (Twenty years ago 7,000 died each year from whooping cough as compared to 310 now.)

10 extra years of life (Life expectancy for a baby now as compared with 1930.)

5 hours . . . not 3 months (wages to buy drugs for pneumonia)

Cost: one ice cream soda a day (refers to cost of prescriptions)

These pieces were based on the theme "Today's prescription is the biggest bargain in history." I agree—today's medical care in all of its facets is quite a bargain. But who knows it better than you and I in the health professions. And who can tell the story better than we can tell it? And who is to blame if we don't tell it? And who in the long run loses if we don't tell it or if we get lost along the way because of bickering? Not just you and I but everybody—our families, our friends, our countrymen. So let me stress and stress again the need for looking for the signposts of progress. They can be found where we may well be today—at our professional crossroads.

Typical Days

FROM THE SECRETARY'S DIARY FOR MARCH 1956

1st All of the forenoon at the University Club in New York City attending the annual meeting of the American Foundation for Pharmaceutical Education and its board of directors. Also viewing the premiere of the film prepared for the American Association of Colleges of Pharmacy and the Foundation to aid in the recruiting of pharmacy students. In the evening, attending the annual dinner of the Drug, Chemical and Allied Trades Section of the New York Board of Trade at the Waldorf-Astoria, and marveling at the superb organizing job which Helen Booth performs each year in the arrangement of this affair which draws over 2,000 top level drug industry men to the Waldorf and taxes the hotel facilities to utmost capacity.

7th An early morning departure for Philadelphia to meet Eric Martin and E. Fullerton Cook and motoring with them to the Mack Printing Company at Easton, Pa., to work on the JOURNAL and discuss anticipated transfer of editorial responsibility to Dr. Martin, who comes to A.PH.A. from the University of Pennsylvania and the editorship of *Remington's Practice of Pharmacy*.

9th Most of this day with the Committee on Public Relations, planning for 1956 National Pharmacy Week and preparing the annual report to the A.PH.A. Convention, as well as reviewing the many suggestions now being circulated to provide an adequate professional relations program for pharmacy.

15th Yesterday and today a visit from our auditors who review the financial records and prepare the annual audit of A.PH.A. accounts. These annual checkups of the ASSOCIATION'S financial status reflect its growth more clearly than any other review.

17th Last night attending a meeting of the steering committee of the Committee on Status of Pharmacists in Government Service with representatives of the armed forces joining us at dinner at the Washington Hotel. This morning an early session of the committee with Major General Silas Hays, Army Surgeon General, reviewing the entire situation with regard to pharmacy in the Army. Chairman Einbeck questioned the General on the future of pharmacy in the Medical Service Corps and received frank replies to equally frank questions. Another session of the committee following the meeting with Gen. Hays and then back to the headquarters building for further attention to the annual Convention program.

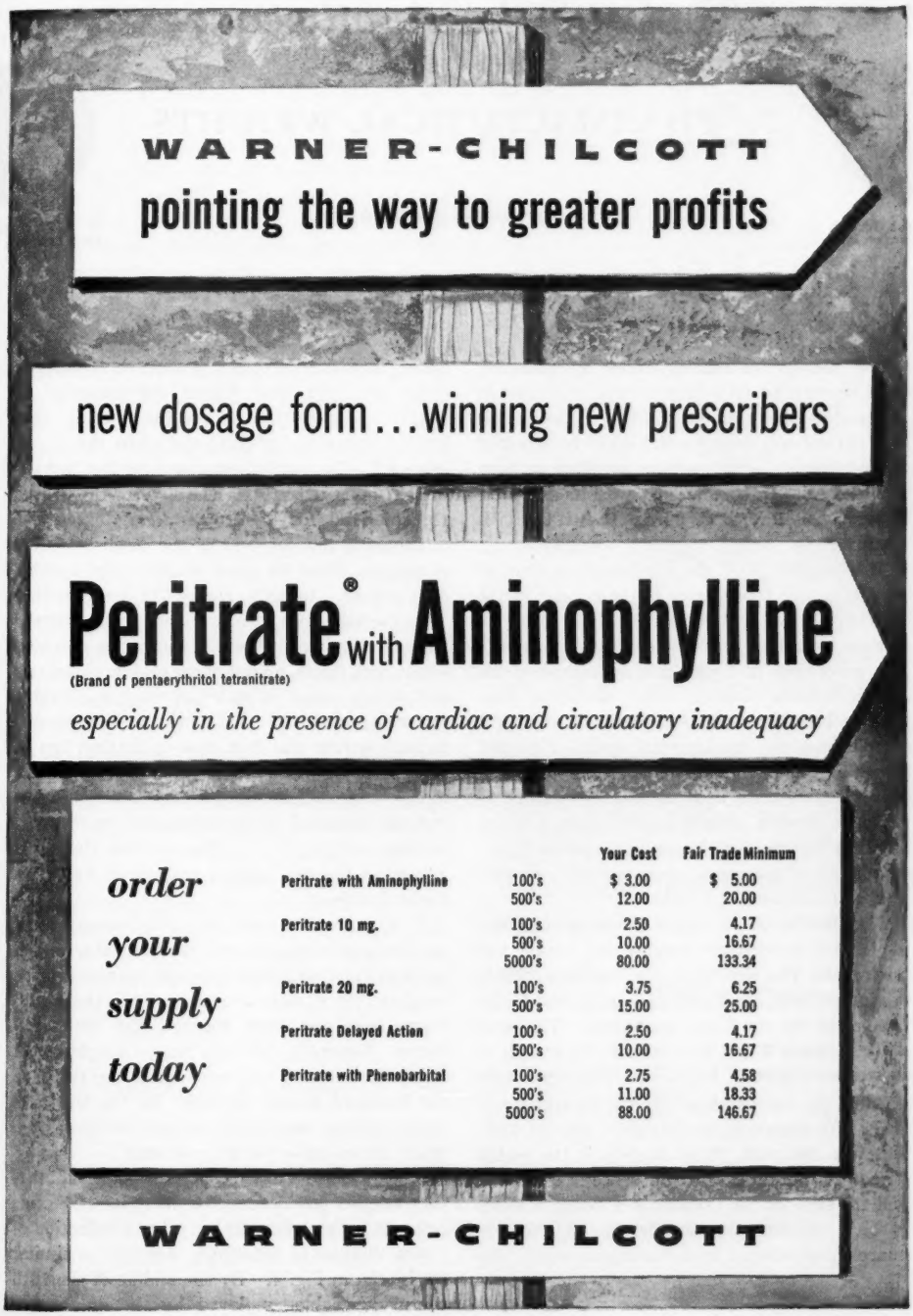
19th Today attending the delegate meeting of the American Council on Education and participating in a panel discussion on scientific manpower; and pointing out that education for the professions should be preceded by a general college education so as to broaden the horizons of prospective specialists in the various phases of medical care.

24th Today came Dr. B. Olive Cole and Mrs. A. G. DuMez to supervise carpeting and installation of additional furniture in the women's lounge at the headquarters building, thus completing another phase of the program of the A.PH.A. Women's Auxiliary in furnishing this lounge for our visiting ladies and women members of the headquarters staff. Our thanks to these good ladies and to the Women's Auxiliary for another splendid contribution to the facilities of our building.

26th Much last minute preparation for various phases of the program of the Detroit convention with much telephoning to assure appearance of special guests and speakers at the section meetings and the joint meeting with the Michigan Academy of Pharmacy to celebrate the 50th anniversary of the enactment of the Federal Food and Drug Act which made the *National Formulary* an official standard for official drugs. Particularly pleased to know that Mrs. Harvey Wiley will be with us as a guest of honor on this occasion, especially since Dr. Wiley was so closely related to the profession of pharmacy when he worked for the passage of this legislation.

27th Now discussing with Secretary C. J. M. Roesch of the Texas Pharmaceutical Association the program of interprofessional relations which, it is hoped, will reduce clinic and M.D. operated pharmacies to a minimum. A plan now in effect in Texas for contact between organized medicine and pharmacy seems to offer good prospects for reducing to a minimum the unfavorable results stemming from physician operated pharmacies.

29th Today greeting some thirty visiting students of the College of Pharmacy of the University of South Carolina on their way back to Columbia, S.C., from trips to northern pharmaceutical manufacturing plants.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Tools of the Apothecary

1. Ancient Roman coin drachm weight

3. PHARMACEUTICAL WEIGHTS

6. 19th cent coin drachm wei

*by George Griffenhagen**

The practice of making coins by stamping small pieces of metal is said to have originated in Lydia (Asia Minor) about 650 B.C. These small pieces of uniform money which could be accepted individually at sight without weighing in turn provided suitable standards as weights and were commonly used for such purposes until the 18th century A.D.

The beginnings of the apothecary system of weights can be traced back to the coinage of the ancient Greeks and Romans. The basis of Roman metrology was the scruple (*scripulum*), and according to Sydenham's *Coinage of the Roman Republic* (London, 1952), all Roman coinage was based on weight-standards of which the scruple was the fundamental unit. Figure 1 shows a Roman drachm (equal to 8 scruples). Other Roman coins used as weights included *as* (*libra* or Roman pound) equal to 288 scruples, *semis* (half-pound)—144 scruples, *quadrans* (quarter-pound)—72 scruples, *uncia* (ounce)—24 scruples, and *sestertius*—1 scruple.

The theories of the origin of the symbols employed for apothecary weights are varied and numerous. The sign ℈ for the scruple probably originated with the Greek *gamma*, γ, the Greek equivalent for the Latin *scripulum*. The similarity between ℈ and the sign for the scruple as sometimes written ℈ʹ is obvious. The sign for the drachm, ʒ, was employed by the ancient Egyptians. Thompson notes, however, that in 1360, Glanville recorded, "The dragma is the eighth part of uncia and weigheth 3 pence of silver . . . and the sign for the dragma is ʒ pence of silver = ʒ." According to Mater, the sign for the ounce, ℥, developed from the drachm sign: "By adding an extra line to ʒ you could show that the ounce was the next higher denomination of weight." However, Rice records that the sign for the ounce is "nothing else than the Greek letter ξ." The symbol employed for the "uncia" in 1587 appeared as ξ. The sign for the pound, lb, is derived from the Roman *libra*.

The early development of the English system of weights added the *grain* weight to the apothecary system. In 1266, Henry III declared that "An English silver penny called sterling, round without clipping, shall weigh thirty-two grains of wheat, well dried and out of the middle of the ear; and twenty pence do make an ounce and twelve ounces a pound. . ." The "haberdepois" (avoirdupois) system was first used in English law in 1303 when Edward I stated "that every pound of money or of medicines is of twenty shillings weight but the pound of all other things is twenty-five shillings weight. . . ." Thus unfolds the background of the two ancient systems of weight in Great Britain.

It appears that until the 18th century most apothecaries employed standard weights, as pictured in Fig. 2 with their coin equivalents. Nested weights (Fig. 3) were also employed by the apothecary from the 16th through the 19th centuries. Generally the early nested weights were richly ornamented and were made according to the Venetian pound; however, by the late 18th century, most nested (or cupped) weights were made according to the Troy system.

A 17th century set of specially made apothecary weights produced in Nürnberg by "Erasmus Schmidt" is preserved in the private collection of Franz Winkler of Innsbruck, Austria; a similar set is seen in Fig. 4. By the middle of the 19th century, weights employed by the apothecary included a variety of forms. According to Parrish in 1856, "Weights, although sometimes made

* Acting Curator, Division of Medicine and Public Health, Smithsonian Institution, Washington 25, D.C., and Consultant to the A.Ph.A. Museum.

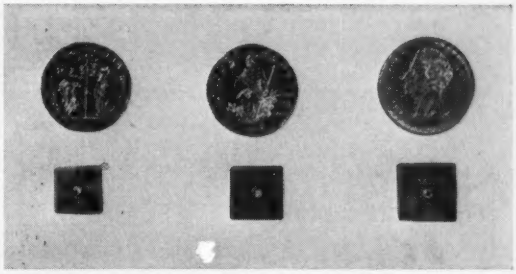
in this country, are usually imported with the box scales. Those for ten grains and upwards are made of brass cut into squares and marked with the official signs denoting the different denominations of weight. Those of six grains and under are of sheet brass cut into squares and variously marked with the number of grains" (Fig. 5).

In 1847, W. and T. Avery of Birmingham, England, introduced the first coin apothecary weights. Parrish describes them as "from 2 drams to $^1/_2$ scruple . . . round, and stamped out of brass plates, with very distinct inscriptions." Kisch reports that similar coin apothecary weights have been manufactured in this country by Henry Troemner, P. Rogers and Company, John P. Gruber, and John M. Maris (Fig. 6).

The adoption of the metric system of weights is well known. The idea was suggested by a number of individuals after the Renaissance, but it was not until April 7, 1795, that the metric system became the legal system of weights and measures in France. The metric system was legalized in the United States in 1866, and it was adopted by the *U.S.P.* in 1890.

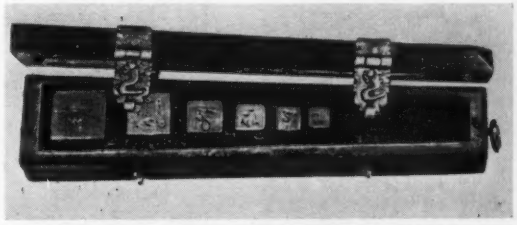
Today, as in the past, there are a variety of weights available for use by the pharmacist. According to Goldstein and Mattocks, "The coin-type of apothecary weight is a constant hazard to compounding accuracy. The irregular surfaces very readily pick up powdered chemicals, dust and moisture, and their surfaces corrode quickly . . . . Some states have outlawed their use in pharmacy."

In place of the coin apothecary weights, Goldstein and Mattocks recommend (and even urge) the use of cylindrical type apothecary or metric weights. "They should be furnished with a wooden or plastic box which serves as a protection against damage, and the set should have tweezers for handling weights." More stringent regulations for prescription weights were recommended by the National Bureau of Standards on August 1, 1955 (see THIS JOURNAL, Aug., 1955).

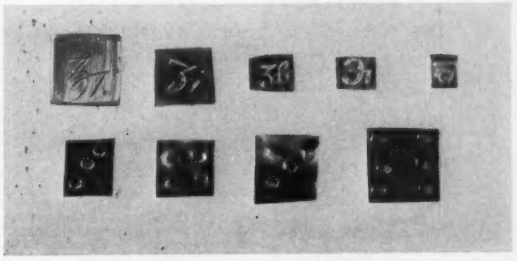


2. Weights with coin equivalents. Left to right: Ducat with Venetian ducat; Zechin with Florentine zecchino, and Frederich dor with Danish Frederick dor. Courtesy Smithsonian Institution.

3. Nested weights. Left to right: 17th century Italian; 19th century Troy; 18th century French; 19th century Troy. Courtesy Smithsonian.



4. 17th century apothecary weights in wooden box, probably made in Nürnberg, Germany. Courtesy Medical Historical Museum, Copenhagen, Denmark.



5. 18th–19th century apothecary weights. Top row: one dram to $^1/_2$ scruple; bottom row: three to six grains. AMERICAN PHARMACEUTICAL ASSOCIATION MUSEUM.

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1852 ΑΦΑ 1956
SECOND CENTURY

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THE ASSOCIATION EXTENDS A CORDIAL WELCOME TO THE FOLLOWING MEN AND WOMEN WHO WERE ACCEPTED FOR ACTIVE MEMBERSHIP DURING THE MONTH PRECEDING PREPARATION OF THIS ISSUE.

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(Continued on page 264)

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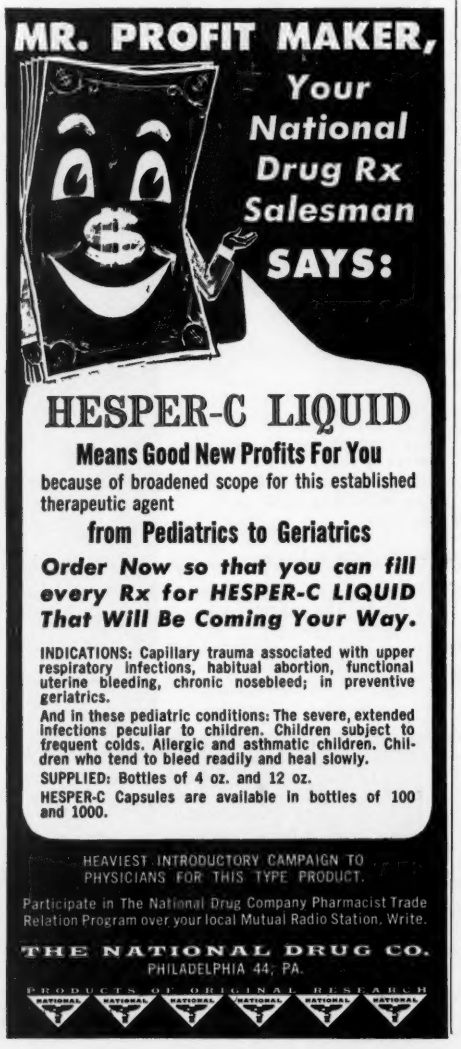
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from page 217

glands, crystalline trypsin exerts its proteolytic action upon contact with clotted blood, exudate, and necrotic tissue within a *p*H range of 5 to 8, optimal at about *p*H 7. It does not act on viable tissue because of a specific trypsin inhibitor and nonspecific inhibitory substances in serum. It is useful for debridement of necrotic wounds and ulcers, abscesses, empyemas, sinuses, and fistulas, and to separate eschar from second degree burns and to liquefy hematomas. Crystalline trypsin is applied to surface lesions either in dry form by means of a powder blower or in a freshly prepared buffered solution as wet dressings. The activity is expressed in units or mg.; 1,000 u. is equivalent to 1 mg. of tyrosine or to 1 mg. of lyophilized crystalline trypsin. Crystalline trypsin is stable when dry at room temperature, but in buffered solution 75% of its activity is lost in 3 hours. The *p*H of lesions to be treated should be determined with nitrazine paper and brought within the range *p*H 5–8 by continuous contact with Sorensen's phosphate buffer solution. Use wet dressings prepared with a fresh solution of 250 mg. (250,000 u.) of the crystalline enzyme in 25 cc. of Sorensen's buffer solution. Repeat every 3 hours. The dry powder is applied as a thick coating and maintained, reapplying to small areas every 15–30 minutes and to large areas at least every 3 hours. It can also be implanted in gelatin capsules in sinus or fistulous tracts that are difficult to irrigate.

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ETHOPROPAZINE HYDROCHLORIDE—Parsidol (Warner-Chilcott)—A phenothiazine derivative, this parasympatholytic agent exhibits a ganglionic blocking action comparable to that of nicotine but it produces depression of the central nervous system that blocks any convulsant activity of the drug. Ethopropazine HCl is useful in parkinsonism, especially for controlling rigidity. Therapeutic doses may produce drowsiness and, less frequently

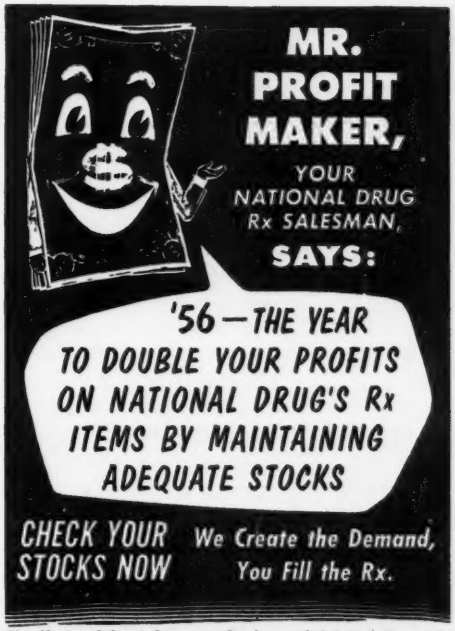
dizziness. Administered orally, the optimal dosage is determined for each case. For mild to moderate severity, 100–200 mg. daily in divided doses for smooth sustained effect; severe symptoms may require gradual increase in the daily dosage to 500–600 mg. Initial dosage is 10 mg. four times daily, then increased 10 mg. per dose every 2–3 days to 50 mg. four times daily at the end of the second week. Side-effects during initial stages of therapy usually disappear with continued medication.

FIBRINOGEN (HUMAN)—Parenogen (Cutter)—Fibrinogen, a protein essential for blood coagulation, is prepared by alcohol fractionation from human plasma and is indicated for certain extensive surgical procedures and for restoring plasma fibrinogen levels to normal. In the employment of fibrinogen (human) the physician should weigh carefully the hazard of transmitting the virus of serum hepatitis against the danger of hemorrhagic complications in which the fibrinogen may be lifesaving. It is administered intravenously after the dried preparation is reconstituted with water for injection: 1 Gm. of dried fibrinogen (human) in 50 cc. of water. The dried product should be stored at 2–10° C. It should be administered within one hour after reconstitution. In acute afibrinogenemia associated with premature separation of the placenta the dosage is 2–6 Gm. (100–300 cc.).

FLUDROCORTISONE ACETATE—Alflorone Acetate (Merck, S. & D.), **Florinef Acetate** (Squibb)—Fluorohydrocortisone acetate—This fluorine derivative of hydrocortisone acetate has the same qualitative actions and appears to require smaller doses than the parent substance, and both have the same ratio of therapeutic to untoward effects at the effective dosage level of antiinflammatory action. The systemic usefulness of fludrocortisone is still under clinical investigation. It is administered topically as ointment or lotion containing 0.05–0.25% fludrocortisone acetate, applying a small quantity to the involved area, without unduly vigorous massage, two to four times daily.

FURAZOLIDONE—Furoxone (Eaton)—N-(5-Nitro - 2 - furfurylidene) - 3 - amino - 2-oxazolidone—A nitrofuran derivative proposed for the treatment of *Trichomonas vaginalis* vaginitis, furazolidone is administered by vaginal insufflation as a 0.1% powder or by insertion of a 0.25% vaginal suppository. Each

(Continued on page 248)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AVC IMPROVED for all types of vaginal infections.
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THE NATIONAL DRUG COMPANY

Erythromycin in treatment of pyoderma

8/12/55

DISCHARGE SUMMARY

Patient, white female, age 39, entered hospital with a diagnosis of lymphoma, proved to be lymphosarcoma by biopsy.

Initially she was treated by X-ray radiation, adrenal cortical hormone and an antinauseant. During this regimen she developed a generalized rash which became infected. This was a drug reaction with infection due either to (1) scratching or (2) a low WBC count due to radiation. A number of boil-like lesions appeared over the body.

On 8/4 penicillin was started in a dosage of 600,000 units daily. Penicillin was continued for six days during which time the pyoderma became worse.

Aspirated material from the lesions yielded hem. S. aureus, coag. + and the following sensitivities were obtained: penicillin, more than 10 units; erythromycin, 10 mcg.; tetracycline, 50 mcg. When these results became available penicillin was discontinued.

On 8/9, erythromycin was started in a dosage of 200 mgm. q.i.d. Marked improvement was noted very soon and by 8/12 almost complete healing of all lesions had occurred. Patient was afebrile throughout.

Final Diagnosis: (1) lymphosarcoma (2) secondary pyoderma due to hemolytic Staphylococcus aureus.

Result: complete healing of secondary pyoderma with erythromycin.

Communication to Abbott Laboratories

specific against coccic infections

Now, you can prescribe an antibiotic (*Filmtab* ERYTHROCIN) that provides *specific therapy* against staph-, strep- or pneumococci. Since these organisms cause most bacterial respiratory infection (and since they are the very organisms most sensiti to ERYTHROCIN) doesn't it make good sense to prescribe ERYTHROCIN when the infection is coccic?

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STEARATE

with little risk of serious side effects

Since ERYTHROCIN is inactive against gram-negative organisms, it is less likely to alter intestina flora—with an accompanying low incidence of side effects. Also, your patients seldom get the allergic reactions sometimes seen with penicillin. Or loss of accessory vitamins during ERYTHROCIN therapy. *Filmtab* ERYTHROCIN (100 and 250 mg.), bottles of 25 and 100. Abbott

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STEARATE

●Filmtab—Film sealed tablets; patent applied for

N.N.R.

from page 245

insufflation requires 5 Gm. of powder, which is administered 2 or 3 times weekly in conjunction with 1 suppository twice daily for 1 week and then once daily throughout a complete menstrual cycle including the period of menstrual flow. It is usually employed in conjunction with other trichomonal agents.

GALLAMINE TRIETHIODIDE—Flaxedil Triethiodide (Lederle)—A substituted quaternary amine similar in action to curare, gallamine triethiodide should be used only when facilities for intubation, artificial respiration, oxygen therapy, and administration of antidotes are available. It is absolutely contraindicated in patients with myasthenia gravis. It is administered intravenously as an aqueous solution with the initial dose about 1 mg./Kg. of body weight, with additional doses of 0.5–1 mg./Kg. injected at intervals of 40–50 minutes during prolonged procedures. Like curare, its action is cumulative. The same antagonists that are effective against tubocurarine will interrupt the action of gallamine.

GLUCOSULFONE SODIUM—Promin (Parke, Davis)—A chemotherapeutic agent effective against mycobacterium, glucosulfone sodium is available only in a mixture containing about 88.5% of anhydrous p,p′-diaminodiphenylsulfone-N,N′-di-(dextrose sodium sulfonate) and about 11.5% of dextrose. It is tolerated better parenterally than orally, possibly because the parent sulfone is liberated by gastric acid. In leprosy the dose is 2–5 Gm. daily for 6 days, omitted on the seventh day, then given daily for the next 6 days. Skip one week after each 2-week period of treatment. For tuberculosis, follow the same dosage schedule in conjunction with the usual course of streptomycin therapy. Frequent estimations of the patient's hemoglobin should be made and the drug stopped if any signs of anemia appear.

METARAMINOL BITARTRATE—Aramine Bitartrate (Merck, S. & D.)—A sympathomimetic amine with stronger vasoconstrictor properties than ephedrine, and exhibiting less of the central stimulant effects of ephedrine, metaraminol bitartrate is administered topically in the nostrils as an isotonic solution containing 0.25% metaraminol base buffered to *p*H 6. The solution should be at room temperature or slightly above for dropper or spray application of 2 or 3 drops or 1 or 2 sprays in each nostril every 3 hours, but not more than 4 times daily. Treatment should not extend beyond a week. The solution also may be applied to tampons for intranasal application.

METHSCOPOLAMINE BROMIDE—Pamine Bromide (Upjohn)—Epoxytropine tropate methylbromide—A parasympatholytic agent which produces the antisecretory and antispasmodic actions of anticholinergic drugs, methscopolamine bromide blocks vagal nerve impulses concerned with gastric secretion suppressing the volume and acidity of the secretion. It delays gastric emptying and reduces peristaltic activity of the intestinal tract. It also inhibits salivary secretion and sweating. The oral dose is 2.5–5 mg. administered one-half hour before meals and at bedtime. Dosage must be individualized to avoid or reduce side-effects such as drying of the mouth, constipation, blurring of the vision, and less frequently difficult urination, dysphagia, heartburn, dizziness, palpitation, flushing or excessive dryness of the skin, drowsiness, headache, and nausea. Chewing gum may mitigate mouth dryness.

PRAMOXINE HYDROCHLORIDE—Tronothane HCl (Abbott)—4-[3-(*p*-Butoxyphenoxy)propyl]morpholine HCl—A surface anesthetic agent chemically distinct from procaine-type compounds, pramoxine HCl is useful as a local anesthetic. Initial burning or stinging prior to the onset of anesthesia occurs occasionally, but this should not contraindicate its application except in the eye and nose. Pramoxine HCl is applied topically to the affected area in the form of 1% cream, jelly, or solution. The solution can be applied as a spray or on gauze pads. Repeat applications every 3 to 4 hours. From 5 to 7 cc. of solution is required for spraying the laryngopharyngeal surface. The jelly and cream are used also for lubrication of devices for instrumentation and for digital dilatations or examinations.

PREDNISOLONE—Delta-Cortef (Upjohn), **Hydeltra** (Merck, S. & D.), **Meticortelone** (Schering), **Sterane** (Pfizer)—A dehydrogenated analogue of hydrocortisone, prednisolone exhibits the same systemic actions and has about the same potency as prednisone. It is less irritant to tissues because of its greater solubility and may be suitable for intra-articular injection, but the concentration and dosage has not been determined. It is administered orally in the same dosage as prednisone.

PREDNISONE—Deltasone (Upjohn), **Deltra** (Merck, S. & D.), **Meticorten** (Schering)—A dehydrogenated analogue of cortisone, prednisone shares the actions and uses of the other glucocorticoids employed clinically. It has been shown to control the symptoms of the collagen diseases including rheumatoid arthritis, disseminated lupus erythematosis, periarteritis nodosa, dermatomyositis, and scleroderma. It is effective only while therapy is continued. It is anticipated that prednisone will prove valuable in the symptomatic control of other diseases responsive to cortisone and hydrocortisone. To control severe conditions a suppressive dosage of 30–50 mg. of prednisone daily, divided into four doses may be required. Continue for 2 days to a week then decrease by decrements of 5 or 10 mg. every 4 or 5 days until signs and symptoms recur, then increase by the smallest amount to eliminate the signs of the disease. For milder conditions, 5 to 25 mg. daily have proved effective. To transfer a patient from cortisone or hydrocortisone therapy to prednisone, an intial dose of 25–50% of the steroid originally used is given, then the dose is decreased or increased according to the response of the patient.

PRIMIDONE—Mysoline (Ayerst)—A pyrimidine derivative related to phenobarbital, primidone is effective in the control of grand mal and psychomotor epilepsy. Side-effects include drowsiness, ataxia, psychoses, vertigo, anorexia, irritability, lethargy, general malaise or eruption, painful gums, leg edema, and nonrenal edema of the eyelids. Most side-effects are transitory or mild. The oral dosage for adults and children over 8 years is initially 250 mg. once daily, preferably at bedtime, increased after 4 to 7 days by increments of 250 mg. or less at weekly intervals. A similar regime is followed, using half the dosage, for children under 8 years. A total daily dosage of 2 Gm. should not be exceeded. Withdrawal should be gradual unless serious side-effects require immediate cessation of primidone.

PROPANTHELINE BROMIDE—Pro-Banthine Bromide (Searle)—Propantheline bromide is the isopropyl analogue of methantheline (Banthine) bromide and has the same cholinergic blocking actions, uses, and side-effects. The oral dosage is 15 mg. three times daily with meals and 30 mg. at bedtime. For peptic ulcer, higher dosage may be required. Parenterally (reserved for patients unable to take the drug orally) the dose is 30 mg. every 6 hours intramuscularly or intravenously. For intravenous administration, a dose of 30 mg. should be dissolved in not less than 10 cc. of water for injection. Adjust dosage to minimum required to control parasympathomimetic symptoms and relate to diet and other medication.

THIAZOLSULFONE—Promizole (Parke, Davis)—2 - Amino - 5 - sulfanilylthiazole—The actions and uses of thiazolsulfone are similar to those of glucosulfone sodium (Promin); however it is less toxic and may be administered orally. The drug causes urine to become pink to cherry-red in color. Thiazolsulfone is of less value than other sulfones in leprosy, but may be used with streptomycin in tuberculosis. Only occasionally do vomiting, slight cyanosis, methemoglobin formation, and leukopenia occur. Thyroid enlargement occurs after 2 to 5 months of treatment, and in young persons, prolonged treatment may cause the development of secondary sex characteristics without true sexual maturation. Dosage initially should not exceed 4–6 Gm. daily in divided doses, increased after the first week by 1 Gm. daily until level of tolerance is reached. Children, initially 1 Gm. daily in two divided doses, increased slowly to a blood level of 2–3 mg. per 100 cc. or a total daily dose of 5 Gm. is reached. After 6 months, reduce to maintenance dosage of 1 Gm. daily.

WARFARIN SODIUM—Coumadin Sodium (Endo)—3 - (α - Acetonylbenzyl) - 4 - hydroxycoumarin sodium—A coumarin derivative with blood anticoagulant activity by reduction of prothrombin concentration. It does not affect thrombi or emboli already formed but retards further intravascular clotting. Warfarin sodium is administered intravenously or orally. The blood prothrombin time should be determined prior to and after the initial dose and then at intervals of 24–48 hours during the first 2 weeks and not more than 3 days apart for the second 2 weeks, then weekly for longer therapy. Intravenously, an initial dose of 1 mg./Kg. of body weight (but not less than 60 mg. nor more than 75 mg.) may be expected to prolong a normal prothrombin time in the therapeutic range of 25–45 seconds (whole plasma) within 12–18 hours for a period of 5–6 days. Subsequent doses should be two-thirds the initial intravenously, or either 12.5 mg. orally each day or 25–50 mg. every 2–4 days. Orally the initial dose is 75–100 mg., the effect lasting 2–5 days.

A.PH.A. BRANCHES

STUDENT BRANCHES

Perhaps the most apt description applicable to meetings held recently by a number of the Student Branches of the A.PH.A. would be "audio-visual" in that film presentations played a prominent role. . . ."Going Our Way," a film made available by Parke, Davis & Company, was shown at the February meeting of the **New England College of Pharmacy Student Branch.** Parke-Davis representatives, Carl A. MacDonald and Richard F. Rosce, attended the showing and presented short talks. . . .The **Massachusetts College of Pharmacy Student Branch** meeting in March was also devoted to "Going Our Way.". . .The film, "A Day At Upjohn," was shown at the February meeting of the **Ferris Institute Student Branch.** In attendance at the showing were Messrs. Jerry Dehon and Dale Reed of The Upjohn Company. . . .And presented at the February meeting of the **University of Connecticut Student Branch** was the film, "Span of Life," furnished by The Upjohn Company. . . .The March meeting of the **University of Buffalo Student Branch** was given over to showing the film, "Serpasil," made available by Ciba.

At the **University of Arkansas Student Branch's** March meeting members considered various insurance plans available to retail pharmacies through several of the casualty companies whose representatives were in attendance. The previous month, film presentations held the spotlight with the showing of "Cardiac Arrhythmias" and "Intravenous Barbiturates.". . .Meanwhile, the March meeting of the **University of South Carolina Student Branch** was devoted to a program designed to give students helpful advice on how to develop prescription volume. The film, "Do You Fill Prescriptions Here?" was exhibited, and representatives of the Owens-Illinois Company and McKesson & Robbins Incorporated added to the program with addresses on methods used by successful pharmacists in building a strong professional department within the retail pharmacy. A portion of the meeting was devoted to a discussion on modernization of drug stores. . . ."Do You Fill Prescriptions Here?" was shown at the March meeting of the **Butler University Student Branch.** Attending the showing was Mr. H. W. Prewitt of the Owens-Illinois Company, co-sponsor of the film with the National Wholesale Druggists' Association.

James E. Allen, president of the National Wholesale Druggists' Association, was guest speaker at the February meeting of the **Univer- of Maryland Student Branch.** Mr. Allen spoke on methods which the pharmacist can use in promoting his prescription department. The presentation was supplemented by the showing of "Do You Fill Prescriptions Here?" Richard E. Williams, chief of the Baltimore District of the Federal Food and Drug Administration, spoke on "Enforcement Policies of the Federal Food and Drug Administration" at the March meeting of the Branch.

The Branch is continuing its membership campaign and has reported that it has secured 100 per cent membership among members of the sophomore class.

Elections

Newly elected officers of the **University of Colorado Student Branch** are Dick Meyers, president; Al Dalla, vice president; Floyd Stricker, treasurer; and Iris Wallace, secretary. The faculty advisor is Dean Charles F. Poe. . . . The **Detroit Institute of Technology Student Branch** has elected the following officers to serve in 1956–57: Robert Sullivan, president; Ronald Hutchings, vice president; Theresa Druszkowski, secretary; and Robert Snoddy, treasurer. Prof. J. Vern Crandall is faculty advisor. . . . Rodney Bohn will serve as president of the **University of Wisconsin Student Branch** during the 1956–57 period. Other officers are Gery Kallas, vice president; Mary Lenz, secretary; and Ed Michalofsky, treasurer. Dr. August P. Lemberger is faculty advisor. . . . The February meeting of the newly formed **Creighton University Student Branch** included a showing of the film "Do You Fill Prescriptions Here?" New officers of the Branch are: Ralph H. Wonderlin, president; John M. Early, vice president; William T. Sachs, secretary, and Kenneth J. Kunce, treasurer. Mr. S. C. Pirruccello is faculty advisor. . . . Newly elected officers

He can scratch up sales for you!

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The big outdoor season is just beginning and this eye-catching "itchy man" is ready to help you sell RHULICREAM—Lederle's outstanding analgesic-anesthetic cream for the relief of pain and itching caused by poison ivy, poison oak, insect bites, and other minor skin irritations.

TO BOOST YOUR NET, Lederle now offers three sensational deals, giving you as much as *55% profit*. Pick the deal that's best for you, then stock up and get your share of fast and easy RHULICREAM profits!

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You get *FREE*	36 tubes	12 tubes	2 tubes
	144 tubes	72 tubes	24 tubes
Your cost	$ 48.60	$ 27.00	$ 9.90
Retail value @ 75¢ a tube	108.00	54.00	18.00
Your profit	59.40	27.00	8.10
Percent Profit	55%	50%	45%

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PEARL RIVER, NEW YORK

of the **University of Mississippi Student Branch** are Gordon Wakefield, president; James Weidman, vice president; Darrell Blaylock, secretary; and James R. Flowers, treasurer. Dr. A. A. Dodge is faculty advisor. . . . Newly elected officers of the **Alabama Polytechnic Institute Student Branch** are Richard Scheffield, president; William Davis, vice president; Joseph Hicks, secretary; Charles Lewis, treasurer; and Anthony Brooklere, publicity chairman. Vice President William Davis also serves as editor of *The Auburn Pharmacist.* Norman H. Franke serves as faculty advisor to the Branch.

Two meetings were held in January; one was addressed by Norman H. Massengill, sales manager of the S. E. Massengill Company, and the other by Thelma Morris Coburn, secretary of the Alabama Pharmaceutical Association. Mr. Massengill spoke on opportunities for pharmacists in industry, and Mrs. Coburn described the activities of the Alabama Pharmaceutical Association.

Students continue to play leading roles in the meetings of the **Duquesne University Student Branch.** The February meeting included presentations on "Neatness in Pharmacy," "Toxicology of Household Compounds" and "Law of Drugs and Druggists." Presentations were made by Cesare Banchieri, Maureen Chambers and Joseph Micale. . . . And at the February meeting of the **University of North Carolina Student Branch,** a presentation, "Then and Now," delineating pharmacy's progress through the years, was made by the local chapter of Phi Delta Chi pharmaceutical fraternity.

The February meeting of the **Howard University Student Branch** included an address by Charles C. Rabe, assistant to the A.PH.A. secretary, who spoke on "Services of the A.PH.A. to American Pharmacy." The address was followed by a question and answer period.

After-dinner speaker at the March meeting of the **University of Arizona Student Branch** was Dr. Bertram Kraus, physical anthropologist, whose topic was "Medical and Legal Aspects of Physical Anthropology."

The **Brooklyn College of Pharmacy Student Branch** met in February to hear Professor S. B. Jeffries speak on "Vocation or a Profession." Professor Jeffries is a member of the faculty of the college, and specializes in the teaching of courses in the field of pharmacy administration. . . .A panel discussion on pharmacists' shortcomings—paralleling the foregoing on many points—highlighted the February meeting of the **Washington State College Student Branch.** Panelists were Dr. J. Kopet, member of the Washington State Board of Pharmacy, faculty members Hampton and White, and Spokane pharmacist, Thompson.

Discussion of the importance of biochemistry in the detection and conviction of criminals afforded the **Drake University Student Branch** an interesting March meeting. Speaker for the occasion was J. Earle Galloway, professor of pharmacology at Drake University.

Program speakers for the February weekly meetings of the **Southwestern State College Student Branch** included representatives of Wyeth Laboratories and Lederle Laboratories who spoke on animal health. The final meeting of the month featured a report on drug legislation designed to prevent the marketing of products which have not been subjected to adequate clinical tests. Participating in this program were Dr. Martin Hamner, and students Don Ross, Don Slack, and Gerald Clark. . . . At the March meeting of the **University of Florida Student Branch,** Paul C. Wieseman, chief pharmacist of the Norwich Pharmacal Company, discussed "Public Relations for the Pharmacist." The Branch is sponsoring the annual "Pharmacy Open-House" which will be held in conjunction with the Engineers' Fair.

LOCAL BRANCHES

Representatives of several of the pharmaceutical manufacturing houses have attended Local Branch meetings recently to discuss topics of mutual interest and, in some instances, to contribute film presentations. . . . Two films, "The Greatest Good" and "The Span of Life," were shown at the February meeting of the **City of Washington Branch.** These color, sound films depicting a tour through a large modern pharmaceutical manufacturing plant and the development of a new product were made available by The Upjohn Company. . . . The **Chicago Branch's** February meeting was addressed by Philo Burrin, head of the formula control department of Eli Lilly and Company, who spoke on "U.S.P. Revision." . . . The February meeting of the **Indianapolis Branch** was highlighted by an address

on "Pioneer Chemotherapy in Cancer" by Dr. Robert W. Gardier, pharmacologist of the Pitman-Moore Company. . . . Frank Thompson, representative of Parke, Davis and Company, presented color slides on "The Heritage of Pharmacy" at the March meeting of the **New Orleans Branch.** The Branch has taken an active role in the promotion of better professional relations through participation in a plan designed to disseminate health information literature to the public. The program was initiated in February, and a total of more than ten thousand brochures furnished by the Louisiana Heart Association was sent to more than seventy-five leading pharmacies in the New Orleans area. Ben Bavly, secretary of the Branch, has been instrumental in developing the plan which will eventually provide for the distribution of literature on various medical themes.

A.PH.A. president John B. Heinz presented the charter to the newly formed **Fresno-Madera Branch** at a recent meeting called in Fresno, Calif., for the occasion. . . . And in a neighboring community, Dr. John O. Haman, specialist in gynecology and obstetrics, spoke on "Infertility" when the **Northern California Branch** convened.

The February meeting of the **Southeast Wisconsin Branch** featured addresses on the subject "Public Relations of the Pharmacist" presented by Edward Keating, Chicago pharmacist, and W. H. Fraesier, assistant regional manager for Lederle Laboratories in the Chicago area. The March meeting was devoted to a discussion on "The Use of Radioisotopes in Pharmacy and Medicine" by Dr. John Christian, professor of pharmaceutical chemistry and coordinator of bio-nucleonic research at Purdue University.

The **Puget Sound Branch** meeting in February was held jointly with the local Chapter of the American Society of Hospital Pharmacists and the Association of Professional Representatives. Speaker for the evening was Dr. Brock Chisholm, a former director of the World Health Organization, who explained the organization of WHO and the structure of the other sections of the United Nations such as the International Labor Organization, UNESCO and others.

The **Southeast Texas Branch** held two meetings in March. The subject "Radioactivity in Pharmacy" was presented on two successive nights for the benefit of members who could not attend the initial meeting. The Branch has its own publication, *The Subscript,* which is published on a monthly basis. The editors of this informative publication are Doctors Don and Ruth Kroeger, a husband-wife team. . . . And at the March meeting of the **Philadelphia Branch,** the speaker was Dr. Joseph V. Brady, chief of the psychology department of the Walter Reed Army Medical Center, whose subject was "An Experimental Approach to the Evaluation of Drug Effects on Behavior." Dr. Brady explained the scientific approach to the psychopathology of behavior, and gave a general description of the methods and experiments used in this new area of pharmacology, as well as the effects of some of these drugs on animal behavior.

Education Beyond High School

The American Council on Education held open discussions on March 19 in preparation for the establishment of a President's Committee on Education Beyond the High School. Dr. Robert P. Fischelis served on the panel dealing with "Demands on Higher Education To Supply Skilled Manpower To Meet the Needs of the Economy." Dr. Fischelis made a plea for a broader base to professional training. He requested educators to include more cultural subjects and to consider human factors so that a better relationship with other members of the health professions might be encouraged. As a concrete example of the need for breadth he reviewed the activities of his own profession in education, government, industry and other areas.

The American Association of Colleges of Pharmacy was represented at the meeting by Dean Karl L. Kaufman of Butler University. Key speakers included Helen D. Bragdon, General Director, American Association of University Women; Dael Wolfle, Administrative Secretary, American Association for the Advancement of Science; Russell I. Thackrey, Executive Secretary, American Association of Land-Grant Colleges and State Universities; Rev. Edward B. Rooney, Executive Director, Jesuit Educational Association; J. Conrad Seegers, President, Muhlenberg College, who represented the Association of American Colleges; and Ronald B. Thompson, Registrar and University Examiner, Ohio State University, representing the American Association of Collegiate Registrars and Admissions Officers.

News *and* Notes . .

COLLEGES

Dr. M. G. Webber, associate professor of pharmacy, represented the **University of Houston College of Pharmacy** at the Eighth Annual Hospital Seminar in Austin, Tex., on February 11 and 12. The seminar was conducted jointly by the **University of Texas College of Pharmacy** Division of Extension and the **Texas Society of Hospital Pharmacists.** . . . **Dr. R. L. Boblitt,** assistant professor of pharmacy, **University of Houston College of Pharmacy,** represented the University at a conference with the Board of Directors of the **Texas Pharmaceutical Association** on February 23.

Inspection of the College of Pharmacy for continued accreditation was held March 8 and 9 by the **American Council on Pharmaceutical Education.** Included on the inspection committee were: **Dr. Melvin W. Green,** director of educational relations for the council; **Dean T. D. Rowe,** dean of the **University of Michigan College of Pharmacy;** Leon L. Kahanek and Frank Reece, members of the **Texas State Board.**

For the 15th consecutive year, **Dr. Ivor Griffith** has been re-elected president of the **Philadelphia College of Pharmacy and Science.** . . . And at **Texas Southern University,** Houston, Tex., **Dr. Samuel Milton Nabrit** took office as president in impressive ceremonies held last month.

The **University of Oklahoma College of Pharmacy** sponsored its Sixth Annual Seminar on March 8. The program topics and speakers included the following: "Public Relations," **Dean Ralph W. Clark;** "Pharmacy in 1976—A Trip to the Future," **Dr. Ralph Bienfang;** "Opportunities for Pharmacy with Radioactive Isotopes," **Dr. Henry H. Turner;** "Why the Hospital Pharmacist Should Make Intravenous Solutions," **Darrell L. Gifford.**

Monsanto Chemical Company will make a $1500 grant-in-aid to **Kansas University School of Pharmacy,** department of pharmaceutical chemistry, to support graduate research during the 1956–57 school year. The work will be directed by **Dr. Joseph H. Burckhalter,** professor of pharmaceutical chemistry, who will return from Tuebingen, Germany, where he currently holds a Fulbright Research Fellowship at Eberhard Karls University.

ASSOCIATIONS

The **American Foundation for Pharmaceutical Education** held its Annual Appreciation Luncheon on March 1 at the University Club, New York City. Nearly 200 patrons of the Foundation were in attendance to hear Dr. James Douglas Brown, dean of the faculty, Princeton University, speak on "Creative Manpower."

A Food and Drug Law "Golden Anniversary Week," sponsored by the **Association of Food and Drug Officials of the United States,** is scheduled for June 24–30. The Food and Drugs Act and Meat Inspection Act became law on June 30, 1906.

The "Ohio Pharmaceutical Seminar" was held March 19–22 at the Ohio State University, Columbus, Ohio. Sponsored by the **Ohio State Pharmaceutical Association** in cooperation with the College of Pharmacy, the seminar dealt with a variety of subjects aimed at instructing its participants in improving service to customers and, hence, store profits.

The **New York State Pharmaceutical Association's** new *Dental Formulary* was the subject of the April 25 meeting of the **New York Academy of Pharmacy,** held at the New York Academy of Medicine.

The two dental leaders who addressed the meeting were **Dr. Herbert L. Taub,** president-elect of the Dental Society of the State of New York; and **Dr. Edward F. Mimmach,** professor of materia medica and therapeutics at the School of Dentistry, University of Buffalo. The two pharmaceutical speakers were **Fred Lascoff,** prescription editor of *Drug Topics* and a member of the State Pharmaceutical Association's Dental Formulary Committee; and **William Weingold,** a member of the faculty of the Columbia College of Pharmacy and a consultant to the committee. **Calvin Berger,** president of the State Pharmaceutical Association and chairman of the committee, will preside.

associations, colleges, manufacturers, people . . .

The State Association recently distributed a copy of the *Dental Formulary* to every one of the 11,000 dentists in the state.

At the Spring meeting of the Advisory Council of the **Pharmaceutical Foundation of the University of Texas** held on March 15, the following officers were elected: Walter Kuntz, chairman; Tom Gunning, Jr., vice chairman; Henry M. Burlage, executive secretary; Joe Arnette, assistant secretary.

MANUFACTURERS

An "Abstract of Changes and Additions in the U.S.P. XV and N.F. X" has been prepared by **Mallinckrodt Chemical Works** for distribution to the drug and pharmaceutical industry. The booklet contains a complete list of products admitted to the U.S.P. XV and N.F. X, which became official on December 15, 1955. It lists all products that appeared in the U.S.P. XIV and N.F. IX but were not admitted to the new editions. In addition, it indicates products transferred from the U.S.P. to N.F., and vice versa, and designates significant changes in products, titles, tests and specifications. Copies of this booklet are available upon request from Mallinckrodt offices in St. Louis and New York.

PEOPLE

Roland H. Noel has been named director of sales coordination for **Bristol Laboratories, Inc.** . . . **Paul de Haen** has resigned his position as vice president of the **Ames Company** and will specialize as a pharmaceutical consultant with offices in New York City. . . . **Dr. Herbert E. Silcox** has been appointed to the new position of technical director of the **Merck & Co., Inc. Chemical Division.** . . . **Irwin S. Shupe** has been designated director of control at the principal manufacturing plant of **Winthrop Laboratories** in Rensselaer, N.Y. . . . **Gilbert J. Straub** has become vice president of **The Purdue Frederick Company** in charge of the product development division, and effective February 1, **Professor Michael Iannarone** of **Rutgers University College of Pharmacy** was the 1956 honoree of the **Pharmacists' Guild of New Jersey** at its sixth annual dinner dance held April 8 at the Meadowbrook Restaurant, Cedar Grove, N.J.

Carl M. Anderson was elected secretary of **Merck & Co., Inc.**, effective February 1.

Arthur E. Tempel has been appointed technical director of the Chemicals Sales Department, **E. R. Squibb & Sons Division,** Olin Mathieson Chemical Corporation, . . . and **Kenneth L. Brown** has been designated director of advertising of **Wyeth Laboratories** while **Norman O. Oldroyd** has been named as advertising manager.

Dr. Gradie R. Rowntree, medical director of the Fawcett-Dearing Printing Company of Louisville, Ky. has received the Physician's Award presented annually by the President's Committee on Employment of the Physically Handicapped for outstanding achievement.

On March 8, **John A. MacCartney,** president-elect of the AMERICAN PHARMACEUTICAL ASSOCIATION, was guest speaker at a meeting of the Cambria-Somerset (Pa.) Pharmaceutical Association, and on March 27, he spoke at a professional pharmacy clinic on the Purdue University campus. On both occasions, Mr. MacCartney emphasized the important role of a good public relations program in the pharmaceutical field. As professional relations manager for **Parke, Davis & Company,** he is particularly well qualified to speak on this subject.

Dr. Frederick F. Yonkman, vice president in charge of research for **Ciba Pharmaceutical Products Inc.,** was honored recently with two awards presented by the **Michigan State Medical Society** and the **Michigan State Pharmaceutical Association.**

The Michigan State Medical Society presented a scroll to Dr. Yonkman as "official representative of the pharmaceutical industry at the 1956 Michigan Clinical Institute in deep appreciation and grateful recognition of distinguished service rendered to the peoples of the world through scientific research, modern production and distribution of life-saving drugs and education of the public in the great advances of medicine."

Pharmacists!

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and

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Philadelphians Sponsor Pharmacy Forum

Two hundred and fifty pharmacists and some 200 senior pharmacy students in the Philadelphia area attended the First Annual Pharmacy Forum on March 14 which was sponsored jointly by the Philadelphia Branch of the A.PH.A., the Philadelphia Chapter of the American College of Apothecaries, the Drug Salesmen's Association of Pennsylvania, the Philadelphia Association of Retail Druggists, and the Philadelphia Hospital Pharmacists Association.

The afternoon program included addresses on "Chemotherapy of Virus Diseases" by Dr. Oscar C. Liu, research associate in virology, Sharp & Dohme; "New Approaches to Geriatric Therapy" by Dr. Henry F. Page, associate in medicine at Lankenau Hospital in Philadelphia; and "Recent Advances in Medication" by Dr. Dale G. Friend, staff member of Peter Bent Brigham Hospital, in Boston.

The evening session was devoted to discussions on "Salaries of Pharmacists and Apprentices" by Hyman C. Bogash, secretary of the Philadelphia Association of Retail Druggists; "Assured Profits From Your Store" by Joseph J. Shine, editor and publisher of the *Central Pharmaceutical Journal;* and "The Pharmacist and Dispensing Physicians" by Wallace Werble, editor of *F-D-C Reports* and *F-D-C Drug Letter.*

The dinner session was highlighted by an address on "Professional Crossroads" by Dr. Austin Smith, editor of the *Journal of the American Medical Association.* It appears on pages 234–237 in this issue.

Prescription Writing for Podiatrists

The Pharmaceutical Council of Greater New York has prepared a new booklet for distribution to podiatrists in the Greater New York area. Included in the 20-page booklet are sections devoted to fundamentals of prescription writing, calculation of doses, and podiatric prescriptions.

Last year the Council prepared a booklet entitled "Aids to Prescription Writing for Dentists" which was sent to 8,500 dentists in the New York area. It was most enthusiastically received by the dental profession, and encouraged the Council to expand the formulary system to the other professions.

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The Upjohn Company, Kalamazoo, Michigan

NEW Prescription Products

All items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information at the same time, or even before, products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Practical Pharmacy Edition, Journal of the American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington 7, D.C.

Achrocidin Tablets

Description: Each tablet contains: tetracyline (Achromycin) HCl, 125 mg.; phenacetin, 120 mg.; caffeine, 30 mg.; salicylamide, 150 mg.; chlorothen citrate, 25 mg.

Indications: For control of secondary infections and relief of symptoms of common cold.

Administration: Two tablets with full glass of water or bland drink at onset of symptoms, then 2 tablets 3 to 4 times daily for 3 to 5 days.

Form Supplied: Bottles of 24 tablets.

Source: Lederle Laboratories, Pearl River, N. Y.

Aqua-B with Ascorbic Acid Injection

Description: A solution containing, in each cc.: thiamine HCl, 12.5 mg.; riboflavin, 3 mg.; pyridoxine HCl, 1.5 mg.; *d*-pantothenyl alcohol, 15 mg.; nicotinamide, 50 mg.; ascorbic acid, 75 mg.

Indications: For nutritional supplementation.

Administration: Intravenously or slow intramuscular injection, 1–2 cc. on alternate days, or as required.

Form Supplied: 10-cc. vials.

Source: The Upjohn Company, Kalamazoo, Mich.

Consol Suspension

Description: A thixotropic suspension containing in each 5 cc.: narcotine 5 mg.; terpin hydrate, 50 mg.; doxylamine (Decapryn) succinate, 3 mg.; menthol, and 1.3 % alcohol.

Indications: Antitussive-expectorant for control of cough.

Administration: One or two teaspoonfuls, repeat every 3 hours; children 3 to 12 years, $^1/_2$–1 teaspoonful; children under 3 years, $^1/_2$ teaspoonful.

Form Supplied: Bottles of 4 oz. and 16 oz. Federal record of sale required. Prescription only.

Source: The Wm. S. Merrell Company, Cincinnati, Ohio.

Novahistine with Penicillin Capsules

Description: Each capsule contains: phenylephrine HCl, 10 mg.; prophenpyridamine maleate, 12.5 mg.; pencillin G potassium, 200,000 u.

Indications: In the treatment of respiratory congestion with infection by pencillin-susceptible bacteria.

Administration: Two capsules 3 or 4 times daily. Children over six, 1 capsule. The capsule contents are flavored and may be mixed with liquids, jelly or mashed fruit. Administer with caution in hypertension.

Form Supplied: Bottles of 24 capsules.

Source: Pitman-Moore Company, Indianapolis, Ind.

Raudonna Tablets

Description: Each light blue scored tablet contains: reserpine, 0.1 mg.; hyoscyamine sulfate, 0.1286 mg.; atropine sulfate, 0.025 mg.; hyoscine HBr, 0.0074 mg.

Indications: For many conditions where barbiturate-antispasmodic combinations have been used.

Administration: Initially one tablet 3 or 4 times daily, then adjusted according to patient response.

Form Supplied: Bottles of 100 tablets.

Source: Vanpelt and Brown, Richmond, Va.

Sippyplex Powder

Description: Each 36 Gm. (daily dose) of powder provides: Nonfat milk solids, 32.8 Gm.; magnesium trisilicate, 2 Gm.; aluminum hydroxide, 1 Gm.; thiamine, 20 mg.; riboflavin, 4 mg.; pyridoxine HCl, 2 mg.; calcium pantothenate, 2 mg.; niacinamide, 20 mg.; ascorbic acid, 140 mg.; menadione, 1 mg.

Indications: In treatment of peptic ulcer and hyperacidity.

Administration: One to two rounded teaspoonfuls (4.5–9 Gm.) in milk or water 3 or 4 times daily between meals and at bedtime.

Form Supplied: 8-oz. containers.

Source: The Purdue Frederick Company, New York, N. Y.

Tylandril Tablets

Description: Each green scored tablet contains: diethylstilbestrol, 0.25 mg.; methyltestosterone, 5 mg.; reserpine, 0.1 mg.

Indications: Treatment of menopausal symptoms and osteoporosis (particularly postmenopausal osteoporosis).

Administration: For menopausal symptoms, 1 tablet daily (may give 2 a day for a week or two if desired) until patient obtains relief, then $^1/_2$ tablet or less daily. For postmenopausal osteoporosis, 2–4 tablets daily, with stops of 7–10 days in medication every 4–6 weeks to minimize excessive stimulation of the endometrium.

Form Supplied: Bottles of 100 and 1,000.

Source: Eli Lilly and Company, Indianapolis, Ind.

Other New Products

(Chemicals, clinical trial drugs, diagnostic aids, and equipment for the retail and hospital pharmacy)

Americaine Aerosol—New Size

The topical anesthetic Americaine Aerosol (solution of benzocaine 20% and oxyquinoline 0.39%) is available from *Arnar-Stone Laboratories, Inc.*, in the new 3-oz. size in addition to the 5.5-oz. and 11-oz. sizes.

Aspirin (Aluminum Salt) Dulcet Tablets

Cherry flavored sugar tablets containing $1^1/_4$ gr. of aspirin as aluminum acetylsalicylate in each tablet are marketed by *Abbott Laboratories*. The dosage for children 3 to 5 years is 2 tablets every 3 hours for 4–6 doses; under 3 years, only as directed by physician. Available in bottles of 50 and 100 Dulcet tablets with U-Press-It safety cap and bottles of 250.

Caytine—Clinical Trial in Asthma

A bronchodilator drug, JB-251 (Caytine) *Lakeside Laboratories, Inc.*, is reported to give favorable results when administered in tablet or aerosol form for the relief of symptoms of asthma. The drug is still being tested clinically and is expected to be available later in the year.

Co-Deltra and Co-Hydeltra Tablets

Multiple compressed tablets containing, in each, a core of 5 mg. of Deltra (prednisone) or Hydeltra (prednisolone) with an outer coating containing dried aluminum hydroxide gel, 300 mg., and magnesium trisilicate, 50 mg., have been introduced by *Sharp & Dohme* as Co-Deltra and Co-Hydeltra, respectively. The antacids are intended to counteract hyperacidity (increased basal and nocturnal gastric acid secretion) produced by adrenocortical steroid therapy. Both drugs are available in bottles of 30 tablets.

Collapsible Tube Filler

An apparatus claimed to facilitate neat and uniform filling of compounded creams and ointments into collapsible tubes has been made by G.A.W.J.O.E. Paris of Gouda, Holland. It consists of cylinders which can be filled when the hinged form is opened, presenting two halves for each of the four sizes of cylinders. After the ointment has been placed in the cylinder halves, they are closed and the ointment is transferred by insertion of the filled cylinder into the collapsible tube and by pressing the contents of the cylinder into the tube with a piston while the tube is rotated and pulled from the cylinder.

Medihaler Oral Adapter

A device for administering Medihaler medications utilizing inert propellants as inhalation aids. The oral adapter and the medications are marketed by *Riker Laboratories, Inc.* The Medihaler Oral Adapter with case is packed one to a carton.

Medihaler-Epi Oral Inhalation

A 0.5% solution of epinephrine with 0.1% ascorbic acid as preservative in an inert propellant (alcohol 33%) is marketed by *Riker Laboratories, Inc.* One or two oral inhalations are recommended for temporary relief of spasms and wheezing of bronchial asthma. Available in 10-cc. metered-dose vials for use only with a Medihaler Oral Adapter.

Medihaler-Iso Oral Inhalation

A 0.25% solution of isoproterenol with 0.1% ascorbic acid as preservative in an inert propellant (alcohol 33%) is marketed by *Riker Laboratories, Inc.* One or two oral inhalations are recommended for temporary relief of spasms and wheezing of bronchial asthma. Available in 10-cc. metered-dose vials for use only with a Medihaler Oral Adapter.

Mysoline Suspension

The anticonvulsant primidone (Mysoline) has been marketed as a suspension containing 250 mg. of the drug in each 5 cc. by *Ayerst Laboratories*. Designed for the young or difficult

NEW *Prescription Products*

epileptic with grand mal and psychomotor attacks, Mysoline suspension is supplied in 8-oz. bottles.

Neo-Delta-Cortef Drops

A sterile suspension containing in each cc.: delta-1-hydrocortisone (prednisolone) acetate, 2.5 mg. (0.25%), and neomycin sulfate, 5 mg., preserved with 1:5,000 myristyl-gamma-picolinium chloride, for use as eye or ear drops in similar conditions indicating the eye or ear ointment, has been marketed by *The Upjohn Company*. Available in 5-cc. bottles with dropper.

Nop-Dry Vitamin A

A granular form of vitamin A manufactured by *Nopco Chemical Company* is available as Nop-Dry 500 (500,000 USP units per Gm.); Nop-Dry 250 (250,000 u. per Gm.); Nop-Dry 500-50 (500,000 u. vitamin A plus 50,000 u. vitamin D_2 per Gm.); and Nop-Dry 250-25 (250,000 u. A plus 25,000 u. D_2 per Gm.).

Pathilon Parenteral

The anticholinergic agent tridihexethyl iodide for relief of pain from peptic ulcer has been marketed as a solution for intravenous, intramuscular or subcutaneous administration by *Lederle Laboratories*. Dosage is 10–20 mg. every 6 hours. The solution containing 10 mg. of the drug in each cc. is supplied in boxes of 6 or 25 one-cc. ampuls.

Pediatric Abbo-Liter Containers 150 cc.

Abbott Laboratories has made the following 8 parenteral solutions available in 150-cc. Abbo-Liter containers in addition to the 250-cc. and 500-cc. sizes: Dextrose 2.5% and 5% in water; Ionosol PSL; isotonic sodium chloride; sodium lactate 1/6 molar; dextrose 2.5% in 1/2 strength lactated Ringer's, in 1/2 strength Ringer's, and in 1/2 strength saline.

Pincets Lozenges

Candy-like lozenges each containing 250 mg. piperazine hexahydrate (as phosphate) for pinworm or roundworm infestation are marketed by *Walker Laboratories, Inc.* Dosage is varied according to weight of patients starting with 1 Pincet twice daily for children up to 30 lbs. Adult dose is 4 Pincets twice daily.

Pipizan Citrate Syrup

A lime flavored syrup containing piperazine citrate as a treatment for pinworms and ascariasis (round worms) has been marketed by *Sharp & Dohme*. Available in 4-oz. bottles.

Plastic Blood Pack

Plastic containers used in the collection, storage and administration of whole blood and other parenterally administered products are marketed by *Fenwal Laboratories, Inc.* The Fenwal Plastic Blood Pack has received FDA clearance as a new drug (device) application.

Tes-Tape for Urine Sugar Test

A bright yellow tape that can be removed from a handy roll dispenser in 1 1/2 inch strips and dipped into urine to determine the presence and the approximate concentration of glucose (sugar) present is marketed by *Eli Lilly and Company*. The tape is impregnated with two enzymes—glucose oxidase (specific for glucose) and peroxidase—which act in the presence of glucose to change the yellow color of the strip of tape to a light green to deep blue. The tape holder has a chart for comparing color and concentration.

Topicort Spray

Hydrocortisone 0.5% aerosol spray for topical therapy is marketed by *Roussel Corporation*. The spray can be applied directly to dry or weeping dermatologic lesions. Supplied in 15-cc. pressurized glass spray bottle.

Vio-Natal Tablets

Dietary supplementation, sugar coated tablets without phosphorus are marketed by *Rowell Laboratories*. Each 6 of the tablets (dose is 2 tablets 3 times daily) contain: ferrous gluconate, 15 gr.; calcium lactate, 15 gr.; vitamins A, 6,000 u.; D, 1,200 u.; C, 100 mg.; K, 1 mg.; B_1, 3 mg.; B_2, 3 mg.; B_6, 10 mg.; B_{12}, 6 mcg.; folic acid, 0.75 mg.; niacinamide, 15 mg. Supplied in bottles of 100 and 1,000 and drums of 5,000, 10,000, and 25,000.

Vi-Syneral Vitamin Drops Fortified

A lemon-raspberry flavored aqueous liquid containing in each 0.6 cc.: vitamins A, 5,000 u.; D, 1,000 u.; C, 50 mg.; B_{12}, 2 mcg.; B_1, 1 mg.; B_2, 0.6 mg.; B_6, 1 mg.; E, 1 Int. u.; choline, 12.5 mg.; betaine, 12.5 mg.; inositol, 15 mg.; niacinamide, 10 mg.; panthenol, 3 mg. The dietary supplement, administered 0.66 cc. or more daily, is available from *U.S. Vitamin Corporation* in bottles of 15 and 30 cc. and packages of three 15-cc. bottles.

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Obituary

Aubrey A. Brown, 56, of Toronto, Canada, died in March of this year in Fort Lauderdale, Fla. Mr. Brown, who was the executive secretary-treasurer of The Canadian Foundation for the Advancement of Pharmacy, graduated from the Ontario College of Pharmacy in 1920. For 25 years he owned and operated his own pharmacy in Toronto. He was a past president of the Toronto Retail Pharmacists Association, the Ontario Retail Pharmacists Association, and he founded the past presidents group of the latter organization.

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